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PORT OF LIVERPOOL.



ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

TO THE

PORT SANITARY AUTHORITY,

FOR THE YEAR

1914.

[ORDERED BY THE PORT SANITARY AND HOSPITALS COMMITTEE TO BE
PRINTED, 25TH MARCH, 1915.]

LIVERPOOL :

C. TINLING AND CO., LTD., PRINTING CONTRACTORS, 53, VICTORIA STREET.

1915.

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Lent to Prof. Greenwood,

School of Hygiene.

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INDEX.

	PAGE
Actinomycosis in Tongues	74
Aliens Act, 1905	87
Anthrax	23, 24
Army Service Beef	73
Australian Meats	72
Bacteriological Examinations	76
Beri-Beri	19
Boned Meats	74
Canal Boats	65
CerebroSpinal Fever	15
Certificates (Consular)	19
,, (Meat Products)	79
,, (Fumigation)	11, 19
Chemical Examinations	77
Chicken-pox	15, 16
Cholera	15, 26, 27, 50
Comparative Values of Imports of Foods	85
Damaged Cargoes of Meat	72
Diphtheria	15, 16
Docks and Basins, Area of	4
Emigration	88, 89, 90, 91
Emigrant Inspections	91
Enteric Fever	17, 26, 27
Fats, Inedible	75
Fruit	74
Food Inspection	67, 68, <i>et seq.</i>
Food Regulations	67
Fruit Inspection	74
Fumigation Certificates	11, 19
Fumigation of Vessels	10
Hospital, Port Isolation	25
Imported Fats	75
Inedible Fats	75
Infectious Diseases (Tables)	26, 27, 28, <i>et seq.</i>
Inspection of Shipping	63
Leprosy	22
Liverpool Port Sanitary Authority Established	4
Manchester Ship Canal and Port Sanitary Authority	5
Measles	15, 16
Meat Importations	68
Notifiable Infectious Diseases	15
Plague	6, 8, 26, 27

INDEX.

	PAGE.
Plague in Rats	8, 9, 10
Pulmonary Tuberculosis (Phthisis)	25
Rat Destruction	11, 12, 13, 14
Rats Prohibited (Corporation Act, 1913)	12
Rats Caught and Examined (Tables)	13, 14
Rejections of Emigrants	91
Riparian Authorities	5
Sanitation of Vessels	62, 63, 64, 65
Scarlet Fever	15, 16
Shellfish... ..	76, 77
Smallpox	16, 26, 27,
Special Visits and Enquiries... ..	65
Table 1—Sickness and Mortality amongst Rats on Ships	9
„ 2 and 2A—Rats caught and destroyed on Ships and Quays, etc.	13, 14
„ 3 Cases of Typhoid Fever on Liverpool bound vessels	18
„ 4—Cases of Anthrax	24
„ 5—Infectious Disease Landed	26
„ 6—Infectious Disease Landed Abroad	27
„ 7—Vessels dealt with for the prevention of Infectious Diseases	28, <i>et. seq.</i>
„ 8—Inspection of Shipping (Nationalities)... ..	63
„ 9 and 10—Summary of Insanitary Conditions	64
„ 11 and 12—Irish Cattle, Sheep and Swine	66
„ 13 and 14—Meat Importations	70, 71
„ 15, 16, 17, 18 and 19—Food Stuffs Condemned	80 to 84
„ 20—Comparative value of Imported Food Stuffs	85
„ 21—Total quantities of Meat, etc., condemned	86
„ 22—Live Cattle (Irish and Foreign) Landed and Slaughtered at Birkenhead Foreign Animal Wharf	86
„ 23, 24 and 25—Emigration Returns... ..	88, 89, 90
„ 26—Rejections of Emigrants... ..	91
Yellow Fever	15

PORT SANITARY AUTHORITY OF LIVERPOOL.

REPORT FOR THE YEAR 1914, BY THE MEDICAL OFFICER OF HEALTH.

In accordance with the duty imposed by the Local Government Board in their General Order dated March 23rd, 1891, the following report for the year ending December 31st, 1914, is made to the Liverpool Port Sanitary Authority.

The report covers the operations of the Port Sanitary Authority during the year, which have been of an extensive and important character, the work includes the following measures:—

(a) Measures adopted under the Cholera, Yellow Fever, and Plague Order of the Local Government Board.

(b) Measures taken to ascertain and deal with any infectious disease existing on board vessels entering the Port of Liverpool, or which have occurred during the voyage.

(c) The administration of the Orders of the Local Government Board with regard to imported food-stuffs.

(d) Action taken with regard to the sanitation of vessels.

(e) The administration of the Aliens Act.

(f) The supervision of the Emigration traffic as regards disease.

The area of jurisdiction of the Authority is co-extensive with the limits of the Port of Liverpool, and includes, not only dock quays, wharves, etc., belonging to the Mersey Docks and Harbour Board, the extent of which is set out in tabular form, but also the docks of the

London and North-Western Railway Co. at Garston, as well as the lower portion of the Estuary of the Mersey, and the sea within three miles of the coast line extending from Hoylake to Formby Point. The Authority's powers are exercisable over any vessels lying within this area.

The estate of the Dock Board, exclusive of certain lands at Dingle, Tranmere, and Seaforth, is of the following dimensions:—

TOTAL WATER AREA AND LINEAL QUAYAGE OF THE LIVERPOOL
AND BIRKENHEAD DOCKS AND BASINS.

				Water Area.		Lineal Quayage.	
				Acres.	Yards.	Miles.	Yards.
Liverpool Docks and Basins	...	...	...	427	2,967	26	1,466
Birkenhead Docks and Basins	...	...	...	171	3,259	9	1,422
Total	...	...	...	599	1,386	36	1,128

AREA OF THE DOCK ESTATE.

Liverpool	...	...	...	...	1,171 $\frac{1}{4}$ acres.
Birkenhead	...	...	...	...	506 „
Total	...	..	...	...	<u>1677$\frac{1}{4}$ „</u>

It is not without interest to note that the Port Sanitary Authority enters upon the forty-first year of its administration, having been originally constituted by an Order of the Local Government Board dated June 11th, 1874. On December 21st, 1892, the constitution of the Authority was under revision and an enquiry was held by the Local Government Board, at which representatives of the undermentioned Riparian Authorities were present, and the feeling was unanimous that the administration should rest as heretofore with the City Council of the City of Liverpool. The Authorities represented were the Town Councils of Birkenhead, Southport, Warrington, Widnes, Bootle, and the Local Boards of Wallasey, Lower Bebington, Waterloo-

with-Seaforth, Little Crosby, Hoylake and West Kirby, Bromborough, Garston, Toxteth Park and Great Crosby, the Rural Sanitary Authorities of Runcorn, Northwich, Warrington, Wirral, Chester and Prescot, and Runcorn Improvement Commissioners.

As the Order now stands the various Riparian Authorities included in the Port Sanitary District with the apportionment of expenses incurred are as follows:—

Urban Sanitary Authority for the City of Liverpool, 77·7 per centum.

Urban Sanitary Authority for the Borough of Birkenhead, 11·2 per centum.

Urban Sanitary Authority for Borough of Bootle, 6·3 per centum.

Urban Sanitary Authority for Borough of Wallasey, 4·1 per centum.

Urban District Council of Bebington, ·5 per centum.

Urban District Council of Bromborough, ·2 per centum.

In 1894 the Manchester Ship Canal was completed, and on October 16th, 1895, a conference was held at Manchester, Dr. Barry of the Local Government Board, attending. As a result, by the Order dated 30th August, 1897, the Liverpool Port Sanitary Authority was recognised as the Authority for dealing with vessels from Cholera, Yellow Fever and Plague infected ports. By a voluntary arrangement vessels having Smallpox on board on arrival or during the voyage are dealt with in Liverpool. The Manchester Port Sanitary Authority pays the Liverpool Authority a proportion of the expenses incurred.

The position of Liverpool as one of the chief seaports of the World has happily been unaffected by the present war; on the contrary, the trade of the Port has been increased by the arrival of vessels usually trading to Southampton and to certain of the East Coast Ports. The greater part of the Transatlantic trade is now concentrated in Liverpool.

PLAGUE, CHOLERA AND YELLOW FEVER.

Plague.

Plague continues to be widespread in its distribution all over the world. This dissemination has been caused by the rat which is a veritable "globe trotter," being carried by sea and rail many thousands of miles from its place of birth.

Plague is communicated from a plague stricken rat to a healthy rat by means of the fleas which soon abandon their host on the approach of death to find a fresh victim. When a flea in search of fresh food finds a human being with fresh blood circulating in his body he obtains his necessary nutriment; in exchange for which the flea inoculates its human host with the virus of plague which starts the human disease.

Rats therefore are a serious menace to the Public Health. They are so filthy in their habits as tenants of sewers and feeders on everything dirty and diseased that it is no wonder they are carriers of disease, parasites, and plague infection. There is only one thing to do to avoid plague—eradicate the rat. War must be made on them by trapping, poisoning, starvation and "rat proofing."

The maintenance of foci of infection in so many parts of the world year after year despite sanitary measures shews that plague is one of the most resistant and tenacious of all epidemic diseases to eliminate.

In certain countries suppressive measures were prosecuted only so long as human cases occurred. On the subsidence of human infection it was imagined that the plague had ceased, and simultaneously eradicated measures were abandoned. The infection, however, continued in rodents, and a recrudescence of human cases followed sooner or later. This has happened notably in South American countries, Ecuador, Venezuela, Peru, and also in the Orient.

Japan, as regards human cases, has been comparatively free, a few cases only were reported from Yokohama, Tokio, and Kobe.

In China, the densely populated towns of Hong Kong and Canton had a large number of cases throughout the year. A number of cases have also been reported from Bangkok. The majority of the cases in these tropical climates occur in the summer months.

The few cases reported from the Philippine Islands (Manila) are supposed to have been introduced by rats or fleas with merchandise from other Eastern ports.

The Dutch and East Indies were considerably infected, particularly the island of Java.

The usual Indian ports were infected, the largest number of human cases occurring in the order given:—Karachi, Rangoon, Bassein, Calcutta, Moulmein, and Bangalore. Plague has been present at Colombo, in Ceylon, throughout the year.

Bordering on the Mediterranean the chief centres of infection are Alexandria, Port Said, Beyrout, and Smyrna.

The pneumonic type of Plague occurred at Queenstown in South Africa and in a village of the Ural territory of Russia, and also nearer home in Lisbon where six cases occurred in one house.

Plague is endemic at the following South American ports:—Guayaquil, Callao, Iquique, Rio de Janeiro, Bahia, Pernambuco.

In Africa at Mombasa, Zanzibar, Mauritius, and Dakar.

In New Orleans an outbreak occurred, but was early recognised and completely controlled by effective radical measures.

The following ports were scheduled as plague infected, and all vessels arriving thence were subjected to medical inspection:—Bombay, Calcutta, Karachi, Rangoon, Bassein, Alexandria, Beyrout, Mersyne, Bangkok, Mangalore, Rio, Bahia, Colombo, Jeddah, Mombasa, Callao, Guayaquil, Lisbon, Smyrna, New Orleans.

Rat Plague.

The principal agents in the dissemination of bubonic plague are infected rats. It is a matter of some considerable difficulty to ascertain the presence or absence of disease amongst rats on ship board. For several years past the Port Sanitary Authority has employed rat-searchers who visit vessels arriving from plague-infected or suspected ports, and search all parts of the vessel with the object of discovering the presence of an epizootic amongst the rats, or of unusual mortality. Further search of the holds is made as the cargo is discharged. Any vessel presenting unusual mortality is to be regarded with the gravest suspicion until the cause of this has been ascertained. All rats found dead, either on ship board or on shore, are specially labelled and forwarded to the Bacteriologist.

This method is additional to the employment of rat-catchers and has been carried out since the year 1902. The rats trapped are destroyed together with the rat flea by immersion in petrol and are then forwarded to the Bacteriologist. No less than 6,388 rats were trapped on shipboard during the year; this is a considerable increase over the previous year, the increase being due to the extension of plague to certain foreign ports.

Written questions are put by the Boarding Medical Officers as to the existence of rat-plague or of sickness or mortality amongst the rats on board.

These measures have resulted during 1914 in the discovery of an epizootic of plague on one vessel, of an extensive epizootic on a second vessel,* and of unusual mortality on 7 other vessels, particulars of which are given in the subjoined table.

* The rats were much decomposed, and in those specimens sent to the Bacteriologist no evidences of plague were found.

TABLE 1.

Vessels on which unusual mortality amongst rats was found.

Date.	Vessel.	From.	Number of dead rats found.	Number of rats destroyed by fumigation, &c.	Remarks.
Jan. 11th ...	Sailor Prince	Beyrout, &c.	6	76	2 plague-infected ; 2 suspicious.
Jan. 20th ...	Avoet	Las Palmas and Teneriffe	12	44	Dead rats discovered during voyage
Mar. 1st ...	Ville de Paris	W.C. S. America	148	30	The dead rats were very much decomposed.
Apr. 1st ...	Brittany	Rosario via Teneriffe ...	28	17	
Apr. 28th ...	Asturian	Alexandria	78	130	
Aug. 28th ...	Kenuta	W.C. S. America.....	24	193	15 forwarded for examination, the remainder much decomposed.
Sept. 30th ...	Akabo	W.C. Africa via Teneriffe	6	18	Dead rats discovered during voyage
Oct. 15th ...	Hydaspes	Buenos Ayres via Teneriffe	18	164	
Nov. 25th ...	Montrose	Buenos Ayres via Dakar	—	—	Rats probably killed by gases from decomposing maize.

In all cases where the dead rats found were fit for examination they were forwarded to the Bacteriologist. In two vessels, the "Avocet" and the "Akabo," it was reported on arrival that sick and dead rats had been found during the voyage, but none were available for examination, the circumstances were, however, very suspicious. In the case of the "Akabo" the rats were found by those on board in a dying condition and were picked up by hand and thrown overboard. Rats were trapped on all these vessels in accordance with the usual routine and examined by the City Bacteriologist. Immediately upon discharge of cargo the vessels were fumigated throughout with 3 per cent. of sulphur dioxide.

Strict precautions against the egress of rats were adopted in all these vessels, on account of the unusual mortality amongst the rats which had occurred. In the "Ville de Paris" there was evidently a most severe epizootic, dead rats being found in all parts of the vessel. There were on board several thousand bags of cotton seed, and these were all emptied and the cotton seed re-bagged. This resulted in the discovery of several dead rats in the bags, but no live rats. Bacteriological examination of the available rats showed no evidence of plague.

Fumigation of Vessels.

During 1914, 107 vessels were fumigated, compared with 73 vessels in the preceding year. On searching these vessels after fumigation 3,695 rats were found, an average of 34 rats per vessel. The method employed was the burning of sulphur in buckets; these buckets are placed in pans of water as a precaution against fire. The proportion of sulphur dioxide produced is about 3 per cent., the hatches remaining closed for at least 12 hours. The holds were, with one exception, completely empty of cargo. In the majority of cases the vessel was fumigated throughout, and not merely the cargo spaces. The importance of complete fumigation has been fully shown in earlier reports.

The value of this method was fully borne out. Satisfactory results were obtained in all instances, with the exception of one vessel, fumigated with cargo partly loaded. Many vessels have remained completely free from rats, whilst in others on a second or third fumigation small numbers of rats have been found localised to a storeroom or in one of the holds. Persistent fumigation, as recommended by the International Sanitary Convention of Paris, 1911-12 considerably reduces the number of rats on shipboard.

On the other hand the absence of fumigation or the use of faulty and inefficient methods increases the risk of the introduction of plague.

There was a considerable demand for certificates of fumigation by foreign and colonial quarantine authorities. Owing to the increasing demand made upon the time of the inspectors in supervising these fumigations, a fee of one guinea was charged for each of the certificates.

Seven hundred and twenty-nine vessels were recorded during 1914 as having been fumigated abroad within the period of 6 months before reaching the Port of Liverpool. This is a considerable increase on the previous year.

The number of rats stated to have been destroyed by these measures was 3,893. This gives an average of about 6 per vessel on which definite statements were obtained. It is evident therefore, that in a large number of cases the fumigation had been carried out in an entirely ineffectual manner. This, as a rule, resulted from attempts at sulphur fumigation with the cargo in situ, a method of very small value. In other instances failure resulted from the use of too small quantities of sulphur. Whenever the fumigation resulted in destroying any considerable number of rats with subsequent freedom from these rodents it was found that the fumigation had been carried out with empty holds.

Rat Destruction, etc.

Rats have been trapped by the Authority's rat catchers on board ships from infected and suspected ports since 1902 and on the dock estate since 1908.

The tables annexed show the complete returns for the thirteen years, and a complete return of the 24,938 rats caught during the year 1914 by the Health Authorities in the City and the Port of Liverpool.

None of the rats caught on shore in the City and Port showed any evidences of plague. With the occurrence during August of a group of cases of plague apparently deriving their infection from a mill near the docks, efforts were made to discover any infection amongst the rats. Leaflets were distributed calling attention to the importance attached to the finding of sick or dead rats; the area of the docks was searched by the Authority's inspectors and the rat catchers employed were reinforced.

These measures resulted in the discovery of two epizootics in different areas but in neither case was plague the cause. Dead rats found near the Clarence Dock proved to have been infected by Gaertner's bacillus. This is a common cause of outbreaks of food poisoning and the importance of the presence of infected rats amongst stored foodstuffs will be readily appreciated.

A second epizootic was found shortly afterwards amongst rats at the Toxteth Dock. This again was found to be due to a different organism.

In both cases all possible steps were taken for the eradication of these rodents. Traps were set, poison laid down, certain sheds screened with wire, rat burrows were fumigated with sulphur and the holes subsequently grouted with cement and gravel mixed. Certain accumulations of dunnage, ships' stores, sacks, etc., were turned out and rat harbourage destroyed. As has been pointed out in earlier reports the Liverpool docksheds being almost all built of brick and floored with cement offer very little harbourage for rats.

We are indebted to the various Shipping Companies who employ ratcatchers, also to the Zeba Ratcatching Company, for supplying figures of rats caught or destroyed on vessels in the docks of the Port of Liverpool.

The Zeba Ratcatching Company is employed by a large number of shipping firms in this Port, and a monthly return of the rats caught on board certain vessels is forwarded by this Company to the Port Sanitary Authority. All the rats caught by them, and others, have been destroyed on board in accordance with the following provision of the Liverpool Corporation Act, 1913, which makes it an offence to bring rats into the City from ships:—

“No live rats shall be brought into the City from any ships in
“the Port of Liverpool except for the purposes of the Port Sanitary
“Authority, and any person offending against this enactment shall,
“on conviction, be liable for each offence to a penalty not
“exceeding Forty shillings.”

The combined returns of all rats caught and destroyed by shipping firms employing their own ratcatchers, by rat-catching companies, and by the Public Health Authorities is as follows:—

PORT.

On quays and vessels	77,460
----------------------------	--------

CITY.

In warehouses	3,462	}	13,911
„ sewers and other places	10,499		
Total	91,371		

TABLE 2.

Table showing the number of Rats obtained on ships and quays by the Authority's rat-catchers.

13

Year.	NUMBER OBTAINED.			NUMBER			DESTROYED.		
	EXAMINED.			Total.			From Quays.		
	From Ships.	From Quays.	Total.	From Ships.	From Quays.	Total.	From Ships.	From Quays.	Total.
1902	1,946	—	1,946	703	—	703	1,243	—	1,243
1903	5,083	—	5,083	560	—	560	4,523	—	4,523
1904	4,632	—	4,632	3,332	—	3,332	1,300	—	1,300
1905	6,651	—	6,651	5,251	—	5,251	1,400	—	1,400
1906	2,979	—	2,979	2,979	—	2,979	—	—	—
1907	3,169	—	3,169	1,937	—	1,937	1,232	—	1,232
1908	1,871	73	1,944	1,564	73	1,637	307	—	307
1909	2,029	480	2,509	1,413	356	1,769	616	124	740
1910	1,976	77	2,053	1,554	76	1,630	422	1	423
1911	3,097	934	4,031	2,007	920	2,927	1,090	14	1,104
1912	2,472	1,098	4,570	2,311	1,054	3,365	1,161	44	1,205
1913	7,943	958	8,901	3,280	938	4,218	4,663	20	4,683
1914	*10,083	944	11,027	5,264	917	6,181	4,819	27	4,846
	54,931	4,584	59,495	32,155	4,334	36,489	22,776	230	23,006

* 3,635 of these were obtained after fumigation.

TABLE 2A.

CITY AND PORT OF LIVERPOOL.

RETURN OF RATS CAUGHT, EXAMINED OR DESTROYED.

DATE.	CITY.			PORT.			CITY.		PORT.		TOTAL CAUGHT
	Ware- houses, Stores, &c.	Sewers.	Other Sources.	Total.	Ships.	Quays.	Other Sources.	Total.	Ex- amined.	Des- troyed.	
1914.											(City and Port.)
January	34	244	342	620	530	107	—	637	167	457	1,257
February	188	327	382	897	887	95	—	982	224	590	1,879
March	436	296	572	1,304	1,233	97	—	1,330	207	505	2,634
April	393	439	552	1,384	1,052	66	—	1,118	74	626	2,502
May	374	508	643	1,525	756	81	—	837	97	478	2,362
June	332	511	765	1,608	660	104	—	764	342	378	2,372
July	325	591	444	1,360	774	94	—	868	408	285	2,228
August	211	493	181	885	905	55	—	960	293	434	1,845
September	201	606	328	1,135	720	94	—	814	359	506	1,949
October	425	614	211	1,250	1,191	47	—	1,238	416	834	2,488
November	296	477	239	1,012	586	34	—	620	343	439	1,632
December	247	424	260	931	789	70	—	859	301	571	1,790
	3,462	5,530	4,919	13,911	10,083	944	—	11,027	3,231	6,181	24,938

Number of rats caught (City)	13,911
Number of rats examined (City)	3,231
Number of rats caught (Port)	11,027
Number of rats examined (Port)	6,181
Total Number of rats caught (City and Port)	24,938
Total Number of rats examined (City and Port)	9,412

• These figures do not include rats caught or destroyed by various shipping firms employing their own rat-catchers or rat-catching companies

Cholera.

Cholera continues to be prevalent in India, China, Indo China, and Dutch East Indies. An important agent of infection is the cholera carrier, who though showing no visible signs of illness, yet is excreting cholera bacilli. In the Philippine Islands, Hawai, and Omdurman, this has been found to be the cause of outbreaks. In consequence, at Manila, a routine bacteriological examination of the arriving aliens is made in order to detect "Cholera Carriers."

In the theatres of war cholera has been reported from Constantinople, Silesia, Austria Hungary and European Turkey.

In Russia an extensive epidemic occurred at Vinnitza.

Yellow Fever.

This disease is fortunately becoming eradicated. With the exception of a few cases from Southern Nigeria (Lagos) yellow fever has been limited to Tropical America, notably Guayaquil, Caracas, Pernambuco, Bahia, Merida, and the island of Trinidad.

NOTIFIABLE INFECTIOUS DISEASES.

According to the Regulations made by the Port Sanitary Authority (pursuant to the P. H. A., 1875, sec. 125) the following diseases have been made notifiable:—

Smallpox.	Typhoid.
Chickenpox.	Relapsing Fever.
Diphtheria.	Continued Fever.
Membraneous Croup.	Measles.
Erysipelas.	German Measles.
Scarlet Fever.	Cerebro Spinal Fever.
Typhus Fever.	Acute Poliomyelitis.

These two latter diseases have been made notifiable as there is now evidence to show that they are both diseases of an infectious nature, the infection being conveyed by the nasal secretion, as in the case of Diphtheria. Fortunately these diseases are not so prevalent in this country, as they are on the Continent and in the United States, and efforts must be made to prevent any introduction of ship borne cases.

A considerable number of cases of Measles, Scarlet Fever, Diphtheria, and Chickenpox arrived in the port; by far the greater number coming from the United States and Canada on our large Atlantic liners. On arrival at the Stage these cases were visited by the boarding Medical Officers; careful examination in the case of Chickenpox being necessary on account of its confusion with modified cases of Smallpox.

The cases of infectious disease landed at Liverpool from His Majesty's hospital ships were removed to the City's Infectious disease hospitals.

Smallpox.

Seven cases of Smallpox were reported as having occurred on board Liverpool bound vessels; one of these was landed at Liverpool and six abroad. The following ships reported cases:—

S.S. "Carib Prince," "Circassia," "Yangtze," "Canada," "Drina," "Barrowmore," and "Demerara." A case of doubtful skin eruption was landed from the S.S. "Leicestershire."

The source of infection of these cases is shown subjoined:—

				Landed in Liverpool.	Landed elsewhere.
Syria	...	...	...	1	—
Bombay	...	...	...	—	1
Buenos Ayres	...	...	...	—	2
China	...	...	...	—	1
Montreal	...	...	...	—	1
Kustenji	...	...	...	—	1
				—	—
				1	6
				—	—

Total seven cases.

One hundred and forty-eight of the crews and nine hundred and one passengers were vaccinated on the above vessels.

The names and addresses of all on board were obtained in each case and were forwarded to the Medical Officers of the districts of destination.

Enteric Fever.

Sixty-two cases of enteric or typhoid fever were brought into the Port of Liverpool during the year 1914. This is a considerable increase on the figure for the previous year, but is mainly due to traffic diverted to Liverpool through the European war. A further 25 cases were landed abroad from Liverpool bound vessels.

It may be noted that 35 per cent. of the cases reported to the Health Authorities of Liverpool were imported by ships, compared with 17.1 per cent. in 1912 and 24.8 per cent. in 1913. It is gratifying to note that the action taken to prevent the importation of infected mussels has been so far successful that no cases attributable to the consumption of mussels were reported, as against 8, 9 and 2 in preceding years.

Two considerable outbreaks of enteric fever occurred on vessels from New York and Buenos Ayres respectively, the circumstances in both cases being closely similar, and briefly as follows:—

Eight cases occurred amongst the crew of the S.S. "Cymric." The Master was taken ill just prior to leaving Liverpool and a Steward who failed to join was removed to one of the Parish Infirmaries. Six other cases were taken ill during the voyage and landed at Boston, namely, two cooks, a barber, two officers, and an engineer, the onset being in the order given. They had all partaken of food obtained from the saloon galley, the dates of onset being between February 24th, and March 6th. This points to infection during the previous voyage from New York between February 7th and 17th. It is probable that one or other of the cooks who had both been ashore at New York was the means of introducing the infection whilst himself incubating the disease.*

Ten cases occurred amongst the crew of the S.S. "Andes," namely, the photographer, a scullion in the 2nd class galley, five stewards, the marconi operator, an engineer, and the boatswain, the patients falling sick in the order given between September 6th and 15th; all, with the possible exception of one of the stewards, had partaken of food from the second class galley during the stay of the vessel in Buenos Ayres in August. The remainder of the crew and passengers numbering 716 escaped. With the exception of obtaining their food from the same

* This source of infection has recently been demonstrated.

source no other factor was common to the persons affected that was not also common to the remainder of the crew and passengers. It would again appear probable that the scullion in the 2nd class galley who was the second case was the means of introducing the infection during his incubation period.*

An outbreak attributable to a similar cause was reported in the annual report for the year 1911.

Four cases occurred between July 11th and August 22nd last on the S.S. "Merion" trading with Philadelphia, two being landed there and two at Liverpool. The mode of transmission of the infection appeared to be from case to case.

Three patients from different vessels had partaken of oysters at foreign ports. The remaining cases appeared to have been either infected during their stay in various foreign ports, or were passengers, etc., who had been infected prior to embarking on the vessel.

The countries from which vessels bringing cases to Liverpool had sailed are shown in the following table:—

TABLE 3.

87 Cases of Typhoid Fever on Liverpool bound vessels.

						Landed in Liverpool.	Landed abroad.
British Isles	...	...	...	...	...	1	—
Northern Europe	...	...	...	...	...	1	3
Canada	...	...	...	...	...	8	1
New York	...	...	...	...	...	5	1
East Coast of U.S.A.	...	...	...	...	...	2	6
Gulf of Mexico...	...	...	...	...	...	11	3
Pernambuco and Manaos	...	...	...	...	...	3	—
River Plate	...	...	...	...	...	13	1
W.C.S. America	...	...	...	...	...	0	4
Spain and Mediterranean	...	...	...	...	...	9	2
W.C. Africa and Canary Isles	...	...	...	...	...	2	2
India	...	...	...	...	...	1	2
China	...	...	...	...	...	0	—
Australia	...	...	...	...	...	1	—
His Majesty's Ships	...	...	...	...	...	5	—
						<u>62</u>	<u>25</u>

* This source of infection has recently been demonstrated.

Consular Health and Special Fumigation Certificates.

During the year the demand for certificates indicating the freedom of the City from quarantinable infectious sickness and special fumigation of vessels for destruction of rats showed a large increase, the number of certificates of this character issued to merchants and ship-owners for various Consular purposes during 1914 being 731.

Beri-Beri.

The occurrence of cases of beri-beri on board Liverpool bound vessels has been recorded from time to time in our Annual Reports. The presence of the disease on ships renders it important that information should be given to shipowners, shipmasters, and others regarding the main facts which have been ascertained relating to the causation of beri-beri. This disease has been well known for many years in various parts of the world, chiefly in the East, in Japan, China, Malay, also in South America, Philippine Islands, and other parts.

In a large proportion of cases the symptoms take the form of a partial paralysis of the limbs, also frequently swelling of the legs or general dropsy. There is great variety in the degree and combination of the symptoms.

Beri-beri is a very serious disease and has been the cause of thousands of deaths annually in those parts of the world where it is more or less endemic.

Until recently, no satisfactory explanation has been offered of the cause. Many able investigators have studied the disease, some, including Manson have stated that it is an infection of the living quarters due to a microbe, others, that it is caused by a poison or toxin formed in the food or elaborated by a microbe in the intestine, these claims have never been substantiated.

For some years evidence has accumulated that beri-beri is associated with the continuous consumption of white polished rice as a staple article of diet. Braddon was the first to show the close relationship which exists between it and the consumption of white rice. When rice is polished the outer coating or pericarp and sub-pericarpal layers are removed. These coverings of the grain contain certain essential substances necessary for the proper nourishment of the human body. This substance is present in other foods, *e.g.*, beans, peas, and many other articles of food. Persons who live on a more or less diversified diet are seldom afflicted with beri-beri, even if they consume polished rice. Europeans therefore seldom suffer. In tropical climates rice is the principal article of diet.

Considerable support has been given to the rice theory from experiments which have been made on an extensive scale by Frazer and Stanton on Javanese labourers; 300 of these were divided into two

groups, one party receiving polished rice and the other par-boiled* rice. In three months beri-beri appeared amongst those eating the polished white rice; when a certain number of cases had been noticed, polished rice was discontinued and no further cases occurred. There was no disease amongst those eating par-boiled rice. The conditions were then reversed, beri-beri appearing amongst the group previously free from the disease.

Beri-beri was extensively prevalent in the Japanese navy previous to the year 1906, but Takaki eradicated it by changing the rice ration.

In the Philippine Islands, there were a few years ago as many as 5,000 deaths from beri-beri each year in the general population. This has been greatly reduced, and it is now compulsory in all public institutions to use only unpolished rice. The disease in these institutions has now disappeared, whilst formerly there were in them at least 600 deaths annually.

The disease was formerly prevalent amongst the body known as the Philippine Scouts, who lost annually 600 men; an improvement was made by the addition of a legume to the ration and the substitution of under-milled for the highly polished rice previously used, and the disease is now non-existent.

Frazer and Stanton first showed that the nervous condition produced in chickens fed with white rice is similar to beri-beri in human beings and is due to the same cause; if the rice polishings be added to a diet of white rice the fowls remain healthy. It has been pointed out that the phosphorus content of a rice indicated in the terms of phosphorus pentoxide is an indication of the extent of the polishing which it has undergone.

A comparatively harmless rice and one from which not more than the outer pericarp or skin has been removed in polishing will give more than 0.4% of phosphorus pentoxide while a harmful rice from which the sub-pericarpal layers have been removed will yield much less than this.

Whilst this may be true generally, it will not explain those cases on shipboard where a fairly good rice may have been used, but owing to the monotony of the unvaried diet, and the prolonged character of the

* In this rice the sub-pericarpal layers are not removed.

voyage without opportunity of fresh provisioning, individuals begin to lose appetite, assimilation becomes poor, and symptoms of beri-beri may develop. This is more likely to occur amongst Lascars, Indians and Chinese, whose diet is mainly rice, but from time to time we have reported cases amongst European crews, *e.g.*, Norwegian, and in nearly all cases the voyage has been of a protracted character. Therefore there may be other factors which may influence or precipitate an outbreak.

On April 6th it was reported that the s.s. "Sutlej," which had arrived at this port from Indian and Cuban ports had cases of beri-beri amongst the crew. Fifteen patients were ailing at the time; eleven were removed to the Port Sanitary Hospital and three to the Royal Southern Hospital, whilst one died on board before removal.

The disease was not at first checked, and cases of more or less severity continued to occur, and were removed to various hospitals; five further cases were admitted to the Port Sanitary Hospital, making a total of sixteen cases in this hospital.

A complete change of food was ordered, the consumption of rice suspended, and plenty of fresh food, such as vegetables and fish was provided, with the result that the disease was completely checked. In all thirty-two cases, with three deaths, occurred. The native quarters were thoroughly cleansed under the supervision of the Port Sanitary Staff. The Board of Trade Medical Inspector made a special investigation into the food used on the ship.

It was particularly noticed in the cases admitted to hospital that provided the disease had not progressed too far, improvement under treatment took place almost at once.

The movements of the vessel were as follows:—

Calcutta	...	...	...	...	29th November, 1913
Durban . .	...	...	...	...	16th December, 1913
Demerara	...	..	..	...	} 7th January, 1914
Trinidad...	...	...	...	...
Barbadoes	..	...	...	...	26th January, 1914
Havana...	...	...	...	...	26th February, 1914
Janaco ...	...	...	...	...	... 5th March, 1914
Newport News...	...	...	...	...	20th March, 1914
Greenock	...	...	...	...	30th March, 1914
Birkenhead	...	...	...	...

The vessel had carried native emigrants from India to the sugar plantations in Cuba, and the Indian Authorities had passed the stores before shipment.

No complaints were made by the native crew after leaving Calcutta until reaching Newport News, on 5th March, when several native firemen complained of swollen legs; on reaching Greenock several others complained and a doctor was called, and the men put under treatment.

The following is the City Bacteriologist's report on samples of supposed beri-beri rice:—

“ In the investigation of the samples of rice which were supposed to cause beri-beri, pigeons were fed on supposed ‘beri-beri’ rice, on ‘Paddy’ rice, and on ordinary grain. The pigeons fed on ordinary grain and those fed with the ‘Paddy’ rice remained quite healthy and are still alive. Of those fed on ‘beri-beri’ rice, i.e., that which is milled and from which the outer covering of the grain is removed, nine died at periods varying from 29 to 193 days: of these, five showed definite paralytic symptoms. Two which were fed on this ‘beri-beri’ rice are still alive, and have shown no symptoms, though the feeding has been carried on for nearly a year.”

The steamship “Dilwaru” arrived on October 22nd with a number of cases, and the circumstances of the outbreak were somewhat similar to that on the s.s. “Sutlej.”

Leprosy.

Cases of this disease occasionally come under the notice of the Health Authorities, and, as a rule, occur in persons who have lived here for some time, and the disease owing to its undeveloped nature has been unrecognised; other cases occur amongst sailors, chiefly foreign firemen who have recently landed from ships. The cases, as already observed, are very rare, and only two came under notice during the year.

Ah Ling, aged 27, Chinese fireman, native of Canton, isolated in hospital.

San Hin Jin, aged 29, Chinese fireman, native of Canton, isolated in hospital.

Arrangements were made by the Authority to have these men deported, and this was satisfactorily carried out on the 7th March and 30th May, 1914, respectively.

Anthrax.

Eight cases of *Anthrax were reported to the Authorities during the year. Whilst the majority occurred amongst dock and other labourers working amongst hides, bones or other animal products, cases have also occurred, as in former years, amongst those who have handled bags of meal or second-hand bags. These bags have doubtless been contaminated by having contained at one time animal products, or from the latter having been in contact with them probably on board ship. The cases are set out in Table 4.

Three of the patients lived in districts other than Liverpool, viz., two in Runcorn and one in Bootle.

The Runcorn cases were removed to Liverpool hospitals and notified by the Medical Staff to the Liverpool Health Department. The information was transmitted to the Runcorn Health Authorities. The Bootle case was infected on the Liverpool docks. Only one death occurred.

The importance of the subject of Anthrax in connection with the contamination of cattle foods on shipboard and elsewhere has been emphasised for many years by this Authority. The spores of the bacillus gain access to food-stuffs during shipment in foreign ports, during the voyage, or after discharge on the quays.

The Port Sanitary Inspectors always keep this important matter before them during their visits of inspection; they also warn all dock labourers, carters, and others handling animal products to wear suitable protection, such as gloves, head and neck covers; and to avoid handling such products when suffering from cuts, abrasions, etc. Immediate medical attention should be obtained when the first signs of Anthrax infection appear; the longer advice is delayed the greater the risk of a fatal issue.

*Anthrax in man was made a notifiable disease in the City of Liverpool in 1907.

TABLE 4.
CASES OF ANTHRAX REPORTED DURING THE YEAR 1914 IN CONNECTION WITH THE
HANDLING OF ANIMAL AND OTHER PRODUCTS.

Date, 1914	Sex.	Occupation.	Material.	Origin of Material.	Situation of Pustule.	Severity and result.
Jan. 19	M.	Cargo Clerk	Not traced	—	Left Side of neck	Recovery.
Feb. 2	M.	Labourer	Bags of Meal and Rice	Indian Ports	Front of Neck	Recovery.
Mar. 18	M.	Labourer in a Tannery ..	Not traced	—	Left cheek	Recovery.
April 3	F.	Housewife.....	Not traced. Hus- band employed at a Tannery.	—	Back of Neck	Recovery.
April 10	M.	Dock labourer	Dry Hides.	Pernambuco	Back of Hand	Recovery.
May 10	M.	do.	Dry Bones.	Alexandria	Neck	Death
July 7	M.	Labourer	Handling Bags of Meal, brushing- up, etc.	Indian Ports.....	Chin	Recovery.
Dec. 10	M.	Dock labourer	Probably dust from Hides	China.....	Right side of neck	Recovery.

Phthisis.

Under the Public Health (Tuberculosis) Regulations, 1911, the names and addresses of persons suffering from Pulmonary Tuberculosis are notified by ships' surgeons on arrival. During 1914, there were 124 cases reported on Liverpool bound vessels which were landed here, whilst 28 were landed or died abroad on board Liverpool vessels. A certain proportion of these were discovered by the Boarding Medical Officers during the course of medical inspections of vessels from infected ports.

The names and addresses of those resident in the United Kingdom were forwarded to the Medical Officers of Health of the districts of destination or residence. In the case of persons resident in Ireland, the names were forwarded to Lady Aberdeen, so that sufferers might receive the assistance of the Irish Anti-Tuberculosis Association. A considerable number of patients were persons who were on passage to the Continent.

Disinfection was carried out in all instances, special attention being directed to infected bedding. No action is taken which would be in any way detrimental to sufferers in obtaining further employment.

A small number of cases on non-pulmonary tuberculosis were also reported.

The Port Isolation Hospital.

The Isolation Hospital was erected in 1877 on land adjoining the Quarantine anchorage, and is used for the accommodation of sea borne cases of infectious disease.

When Plague threatened our Port in 1901 and 1902, the hospital was extended by the addition of a more permanent and modern pavilion; also suitable laundry, disinfecting apparatus and nurses' quarters were added.

This Hospital is not large enough to accommodate all sea borne cases, which have increased in number with the trade of the Port; it is therefore necessary to remove cases of the usual type found in the City to institutions where these diseases are already accommodated. The large majority are removed to Liverpool hospitals, but cases have, although very rarely, been removed to Birkenhead, Bootle and Wallasey Hospitals when the vessel was berthed in the area of these authorities, and when such removal could be conveniently effected.

Urgent administrative conditions in connection with Liverpool, Birkenhead, and any of the neighbouring authorities have sometimes in the past, though rarely, required the hospital to be used for the isolation of cases which may not come strictly under the jurisdiction of the Port Sanitary Authority, and a suitable charge is made for the treatment of such cases.

TABLE 5.

INFECTIOUS DISEASE.

The actual number of cases of infectious sickness landed from vessels arriving in the Port of Liverpool during the years 1913 and 1914, and the comparison with the average of the preceding 10 years, is shown in the following Table:—

Diseases.	Number of Cases.		Average for the 10 years preceding 1913.
	1913.	1914.	
Smallpox	10	1	7·5
Scarlatina	20	13	11·3
Cerebro Spinal Meningitis	1	0	0·2
Polio-myelitis	1	0	0·0
Enteric Fever	38	62	36·7
Do. (suspected)	22	5	1·8
Diphtheria	14	18	6·1
Measles	36	40	23·3
German Measles	8	1	0·9
Whooping Cough	0	0	0·1
Erysipelas	4	4	5·1
Chicken Pox	9	15	5·9
Cholera and Choleraic Diarrhœa .	0	0	0·6
Yellow Fever.....	0	0	0·5
Plague	0	0	0·8
Suspected Plague	2	0	5·8
Puerperal Fever	1	0	0·2
Phthisis	142	124	0·0
Leprosy	0	1	0·0
Totals	308	284	106·8

TABLE 6.

INFECTIOUS DISEASE.

The number of cases of infectious sickness reported to have occurred on Liverpool-bound ships during the years 1913 and 1914, and which were disposed of prior to the arrival of the vessel at this port, and the average of such cases for the preceding 10 years, are as follows:—

Diseases.	Number of Cases.		Average for the 10 years preceding 1913.
	1913.	1914.	
Smallpox	11	6	16·3
Scarlatina	0	0	1·2
Cerebro Spinal Meningitis	0	1	0·2
Enteric Fever	8	25	14·9
Diphtheria.....	5	5	2·4
Measles	11	7	6·8
German Measles ...	1	0	0·9
Erysipelas	1	0	0·5
Chicken Pox ...	4	9	3·2
Cholera and Choleraic Diarrhœa..	2	1	5·4
Yellow Fever	3	1	5·6
Plague	0	0	2·4
Suspected Plague.....	0	0	1·8
Phthisis.....	10	2	0·0
Totals..	56	57	61·6

The following Table gives the particulars of the 147 vessels
Infectious Disease :—

TABLE 7.

Date 1914.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Jan. 7	Victorian ...	Callao ...	Chicken-pox	... ..
Jan. 8	Comedian ...	New Orleans	Enteric Fever	Royal Southern
Jan. 8	Hypatia ...	Buenos Ayres	—	... ..
Jan. 22	Grampian ...	Halifax ...	Measles ...	Grafton treet
Jan. 22	Sailor Prince	Syrian Ports	—	. ... ..

dealt with by the Authority's Officers for the prevention of

REMARKS.

The patient, a steward, had suffered from Chicken-pox during the home passage, but had recovered on arrival in this Port.

The patient, a seaman, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

This vessel was visited on January 8th and it was ascertained that Plague-infected rats had been found at Hamburg on December 16th, three days after arrival there. The vessel was thoroughly fumigated and disinfected at Hamburg, first by the Nocht & Giensa apparatus, and then with sulphur dioxide generated by burning sulphur in pots, and the effects of the crew steam disinfected. A certificate to this effect was produced. A thorough search was made here, but no dead rats were found. Five rats were trapped in a portion of the ship that was incapable of fumigation; these were examined by the City Bacteriologist, but proved to be healthy. The vessel called at Monte Video and Las Palmas (Grand Canary) between Buenos Ayres and Hamburg, and at Antwerp and Glasgow after leaving Hamburg.

A third class passenger who was removed to the City Hospital South, and the vessel disinfected by the Port Sanitary Officers.

This vessel arrived on January 11th, and all were found well on medical inspection. On January 15th, the Authority's Rat-catcher found six dead rats in the poop; these were forwarded to the City Bacteriologist who reported that two of them presented appearances of Plague; this was subsequently confirmed. In the meantime precautions against the egress of rats were adopted, and the upper work, etc. of the vessel was fumigated with 3 per cent. of sulphur dioxide. The holds were similarly fumigated on January the 17th and 19th on the completion of the discharge of cargo. The names and addresses of those persons who had already left the ship were transmitted to the Authorities of destination, and any persons leaving the vessel subsequently were disinfected together with their effects, and their addresses also transmitted. The names and addresses of all labourers working on the ship, or cargo, were obtained, and the persons kept under observation. Two flats, the "George Deakin" and the "Empire," which had

Date 1914.	Name of Vessel.	Where from	Nature of Sickness.	Hospital to which Patient was removed.
Jan. 22	Sailor Prince <i>continued</i>	Syrian Ports	—	... ..
Jan. 22	Empress of Ireland	St. Johns ...	Measles ...	Grafton Street
Jan. 22	Lusitania ...	New York ...	Scarlatina ...	Netherfield Road
Jan. 22	Alaunia ...	Boston ...	Erysipelas ...	Fazakerley ...
Jan. 24	Lusitania ...	New York ...	Scarlatina ...	Grafton Street
Jan. 29	Haverford ...	Philadelphia	Erysipelas ...	Brownlow Hill Infirmary
Jan. 31	Asturian ...	Constantinople	Chicken-pox	Fazakerley ...
Feb. 4	Campania ..	New York ...	Scarlatina ...	Fazakerley ...
Feb. 7	Andania ...	Boston ...	Diphtheria ...	Fazakerley ...
Feb. 13	Paparoa ...	Brisbane ...	Enteric Fever ...	... ..

REMARKS

carried oranges from the "Sailor Prince," to Manchester, were fumigated there, information having been sent to the Medical Officer of Health of the Manchester Port Sanitary Authority. All parts of the ship were thoroughly searched for rats, both living and dead. There was no extension of the disease either in man or rats, and the vessel left for Swansea and London on the 21st January, the Medical Officers of those ports being advised of the circumstances.

Patient, a child passenger, was removed to the City Hospital, and the vessel disinfected by the Port Sanitary Officers and the City Staff.

The patient, a steerage passenger, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a seaman, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, the assistant boatswain, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

A steerage passenger was removed to Hospital and the vessel disinfected by the Port Sanitary Officers.

A passenger, who was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a passenger, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a steward, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, one of the crew, who was convalescent, proceeded with the vessel to London, the Medical Officer of that Port being notified.

Date 1914.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Feb. 17	Lusitania ...	New York ...	Measles ...	Grafton Street
Feb. 17	Demerara ...	Rio Janeiro...	Suspected Enteric Fever	... ..
Feb. 18	Orissa ...	South American Ports	Enteric Fever (2 cases)	Netherfield Rd.
Feb. 24	Montenegro..	West Coast of Africa	Yellow Fever	... ..
Feb. 25	La Correntina	La Plata ...	Enteric Fever	Netherfield Road
Feb. 25	Campania ...	New York ...	Chicken-pox	Fazakerley ...
Mar. 1	Ville-de-Paris	Callao ...	—	... ..

REMARKS.

A passenger, removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

The patient, a saloon passenger, proceeded to his home in Ireland. Vessel disinfected by the Port Sanitary Officers.

The patients, a saloon passenger and a distressed British seaman, were both removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The chief steward of this vessel died from Yellow Fever at Lagos on the homeward passage. Disinfection carried out by the Port Sanitary Officers.

The patient, chief steward, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a fireman, was removed to the City Hospital, and the vessel disinfected by the Port Sanitary Officers and the City Staff.

This vessel arrived in Liverpool from Peruvian and Chilian ports on March 1st. She was visited on arrival and reported all well on board. On March 3rd the rat-catcher reported an unusual mortality amongst the rats; fourteen dead rats were forwarded to the Authority's Baeteriologist, who reported them to be suspicious of Plague. In the meantime, the vessel was visited by the Assistant Medical Officer, who caused all precautions against the egress of live rats to be observed. The crew, 39 in number, were examined and found well. The cargo was discharged under observation, and by agreement with the consignees 12,000 bags of cottonseed were closely examined and, in many cases, opened on the quay. This resulted in the discovery of three dead rats in the bags. The vessel was fumigated throughout early on March 5th. Altogether 148 dead rats, presumably Plague-infected, were discovered on board; most of these were too decomposed for examination. A further 29 were killed as the result of fumigation. The vessel had taken in cottonseed on November 19th at Cerre Azul, a port near Callao, and grain at Valparaiso on December 27th. Suspicion falls on these two ports as the source of the infection. It is noteworthy that the vessel had been fumigated three times in the course of the voyage, namely, at Ilo, Callao, and Arica, during November and December by a much-advertised fumigating machine. No human cases of plague appeared, and no spread of infection occurred.

Date 1914	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Mar. 7	Cymric ...	Boston ...	Enteric Fever	... ..
Mar. 9	Carmania ...	New York ...	Enteric Fever	Netherfield Road
Mar. 9	Carmania ...	New York ...	Erysipelas ...	Fazakerley ..
Mar. 12	Dominion ..	Portland ...	Diphtheria ...	Fazakerley ...
Mar. 17	Carib Prince	Syrian Ports	Small-pox ...	New Ferry ...
Mar. 17	Carib Prince	Syrian Ports	Enteric Fever	Grafton Street ..
Mar. 23	Cymric ...	Boston ...	Enteric Fever	... ..
Mar. 31	Hylas ...	River Plate...	Enteric Fever (2 cases)	... ..

REMARKS.

The patient, the captain, was removed to private apartments for nursing, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One of the crew, a baker, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a steerage passenger, was removed to Hospital, and the vessel and bedding disinfected.

A steerage passenger, who was removed to the City Hospital, Fazakerley, the vessel and bedding being disinfected by the Port Sanitary Officers and City Staff.

This vessel arrived here on the 17th and reported one case of Enteric Fever. During the medical inspection, the Assistant Medical Officer discovered one of the crew, assistant cook, to be suffering from Small-pox. He was removed to the Port Hospital in the ship's boat; he appeared to have been infected at Jaffa. Twenty-two persons were vaccinated on board, and disinfection was carried out by the Port Sanitary Officers and the City Staff. On the following evening the third engineer was found to have headache and fever. He was at once removed to Hospital; this case eventually proved to be non-infectious. The crew were kept under daily medical observation. The names and addresses of those leaving the ship were notified to the various authorities of destination. The vessel left on the 22nd of March for Manchester, the Medical Officer of that Port being notified.

The patient, a passenger, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Six cases of Enteric Fever occurred amongst the stewards on the outward passage; five of these were landed at Boston, and one at Portland, Me.

One of the crew of this vessel was left in Hospital at Antwerp and a cook, who had gone to his home in the City, was reported as suffering from Enteric Fever. Disinfection carried out.

Date 1914.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.		
April 2	Dictator ...	Mexico ...	Enteric Fever	Netherfield Road		
April 6	Sutlej ...	Indian Ports and Cuba	Beri-Beri ... (32 cases)	New Ferry. ...		
April 8	Yangtse ...	China Ports	Small-pox ..	...	...	...
April 10	City of Calcutta	Bombay ...	German Measles	...	...	...
April 10	Adriatic ..	New York ...	Enteric Fever	...	...	...
April 11	Empress of Ireland	Halifax ...	Chicken-pox	...	...	...
April 14	Broderick ..	Punta Arenas	Scarlatina ...	...	...	...
April 14	Musician ...	Glasgow ...	Chicken-pox (2 cases)	Fazakerley ...		
April 20	Baltic ...	New York ...	Diphtheria ...	...	...	...

REMARKS.

The patient, a seaman, who had gone to his home in the City, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

On arrival in Liverpool it was found that Beri-Beri had recently occurred amongst the crew of this vessel. Fifteen cases were discovered, eleven being removed to the Port Hospital, and three to the Royal Southern Hospital; one case died on board. The disease was not at first checked, and cases of a more or less severe nature continued to occur. Five more being admitted to the Port Hospital, making a total of 16 cases in this Hospital. The Port Sanitary Authority were then requested to deal with the outbreak, and a complete change of food was carried out, the consumption of rice suspended, and plenty of fresh food, such as vegetables and fish, were provided, with the result that the disease was completely checked. The native quarters were thoroughly disinfected and cleansed by the Port Sanitary Staff.

The patient, a pilgrim, was landed at Singapore, where disinfection was carried out.

A saloon passenger, who proceeded to his home in Cheshire. Disinfection of the vessel and bedding was carried out by the Port Sanitary Officers and the Staff.

The case was landed at New York on the home passage, and disinfection carried out at that Port.

A child passenger, being convalescent, proceeded to her home in Surrey, the vessel being disinfected by the Port Sanitary Officers.

The patient, the master of this vessel, went to his home in Waterloo. Vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One of the native crew was left in Hospital at Glasgow, the other being removed to Hospital on arrival in this port. Vessel disinfected by the Port Sanitary Officers.

The patient, a passenger, was landed at Queenstown on the homeward passage. Disinfection of the vessel and bedding was carried out by the Port Sanitary Officers and the City Staff.

Date 1911.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
April 22	Campania ...	New York ...	Chicken-pox	Fazakerley ...
April 27	Carpentaria	Australia ...	Enteric Fever	Netherfield Road
April 27	Laurentic ...	New York ...	Scarlatina ... (2 cases)	Grafton Street
April 27	Ceramic ...	Australia ...	Measles ...	... ..
April 30	Lake Manitoba	St. John's ...	Chicken-pox	Fazakerley ...
May 1	Merion ...	Philadelphia	Measles ...	Fazakerley ...
May 5	Mauretania ...	New York ...	Scarlatina ...	... ..
May 5	City of London	Calcutta ...	Chicken-pox (2 cases)	... ..
May 7	Circassia ...	Bombay ...	Small-pox ...	... ..
May 8	Empress of Ireland	Halifax ...	Diphtheria ...	Mill Lane ...
May 11	Virginian ...	Montreal ...	Diphtheria ...	... ..

REMARKS.

A third class passenger, removed to the City Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers.

One of the trimmers was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a third class passenger, was removed to the City Hospital, Grafton Street, and a second case from the White Star Boarding House on the 28th. The vessel and bedding were disinfected by the Port Sanitary Officers and the City Staff.

A child, who proceeded after recovery with the parents to their home in London. Disinfection carried out by the Port Sanitary Officers.

A pantry boy, who was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

A passenger, who was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

A lady passenger, who was removed to private apartments for nursing in the City, the vessel and bedding being disinfected by the Port Sanitary Officers and the City Staff.

The patients, two of the crew (Lascars), were left in Hospital at Glasgow.

The patient, a native steward, was landed and taken into Hospital at Marseilles, where vaccination and disinfection was carried out.

The patient, a steerage passenger, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One of the Stewards, who had gone to his home in New Ferry, developed the disease after arrival. Vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

Date 1914.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.		
May 12	Darro ...	Buenos Ayres	Enteric Fever	...	...	...
May 14	Malakrand ...	Rangoon ...	Enteric Fever	...	...	...
May 14	Campania ...	New York ...	Leprosy ...	Royal Southern		
May 15	Broadstone ...	Puenta Arenas	Diphtheria ...	...	...	...
May 18	Megantic ...	Quebec ...	Measles ... (2 cases)	Fazakerley	...	
May 18	Novian ...	Mobile ..	Enteric Fever	Bootle	...	
May 19	Crispin ...	Mobile ...	Enteric Fever	Northern	...	
May 23	Victorian ...	Montreal ...	Measles ...	Fazakerley	...	
May 25	Matador ...	Pernambuco	Enteric Fever	Netherfield Road		
May 25	Canada ...	Montreal ...	Measles ...	Fazakerley	...	
May 30	Canada ..	Montreal ...	Enteric Fever	...	...	...
May 30	Laurentic ...	Montreal ...	Chicken-pox (2 cases)	Mill Lane	...	

REMARKS.

One of the crew, who was left in Hospital at La Plata, where disinfection was carried out.

One of the native crew died from Enteric Fever on the homeward passage and was buried at sea. Disinfection carried out by the Port Sanitary Officers and the City Staff.

The patient, a deported alien from the United States, was removed to Hospital, and subsequently proceeded to his home in Sweden.

The patient, one of the crew, had suffered from Diphtheria during the voyage, but had recovered on arrival in this Port.

Two children, passengers, were removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

The second engineer, suffering from Enteric Fever, was admitted to the Bootle Infectious Hospital.

The patient, a seaman, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a seaman, was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

The patient, a seaman, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

A child passenger, who was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

One of the stewards had suffered from Enteric Fever during the voyage.

Two children, saloon passengers, were removed to Mill Lane Hospital; the third case, an infant, which had recovered and had been disinfected, proceeded with the parents to Preston. Vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Date 1914.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which patient was removed
June 5	Socrates ...	Bahia ...	Enteric Fever	... ..
June 5	Laconia ...	Boston ...	Measles ...	Grafton Street
June 8	Medic ...	Australia ..	Measles ...	... ..
June 10	Celtic ...	New York ...	Scarlatina ...	Netherfield Road
June 12	Carmania ...	New York ...	Diphtheria ... (2 cases)	Fazakerley ...
June 12	Orissa ...	Callao ...	Diphtheria ... (1 case) Measles (1 case)	... ..
June 16	Dakar ...	West Coast of Africa	Chicken-pox (2 cases)	Fazakerley ...
June 18	Franconia ...	Boston ...	Chicken-pox	... ..
June 18	City of Glasgow	Calcutta ...	Enteric Fever	... ..
June 19	Empress of Britain	Montreal ...	Measles ...	Fazakerley ...
June 19	Adriatic ...	New York ...	Measles ...	Fazakerley ...

REMARKS.

The patient, a seaman, was left in Hospital at Monte Video on the homeward passage.

The patient, a passenger, was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

A third class passenger suffered from Measles during the home passage, but had recovered on arrival in this Port. Vessel disinfected by the Port Sanitary Officers.

The patient, one of the crew, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patients, passengers, were landed at La Pallice and Lisbon, respectively, on the homeward passage. Vessel disinfected by the Port Sanitary Officers.

One of these was landed at Sierra Leone on the home passage; the other, on arrival in this Port, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a child passenger, was allowed to proceed (by motor) to its home in Accrington. Disinfection of the vessel and bedding by the Port Sanitary Officers and the City Staff.

The patient, a Lascar, was left in Hospital at London on the homeward passage.

A child passenger, who was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

A child passenger, who was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

Date 1914.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which patient was removed.
June 23	Troilus ...	Port Said ...	Enteric Fever	... ..
June 23	Canada ...	Montreal ...	Small-pox ...	... ..
June 23	Canada ..	Montreal ...	Measles ..	... ..
June 25	Calgarian ...	Quebec ...	Measles ..	Fazakerley ...
June 29	Laurentic ...	Quebec ...	Measles ...	... ..
June 29	Cardiffian ...	Burriana ...	Diphtheria ...	... ..
June 29	Clan Alpine ...	Mombasa ...	Chicken-pox	New Ferry ...
June 30	Lusitania ...	New York ...	Suspected Enteric Fever	Grafton Street
June 30	El Paraguayo	Buenos Ayres	Cerebral Meningitis	... ..
July 6	Miami ...	Santa Marta	Enteric Fever (3 cases)	Royal Southern
July 7	Virginian ...	Montreal ...	Diphtheria ... (2 cases)	... ..
July 9	Cymric ...	Boston ...	Measles ... (2 cases)	Fazakerley ...

REMARKS.

The patient, a carpenter, was landed at Colombo on the home passage

The patient, a third class passenger, was landed at Montreal, where disinfection of the vessel and vaccination was carried out.

Patient left at Montreal.

Removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

The patient, recovered on arrival, proceeded to home in Southport. Vessel disinfected by the Port Sanitary Officers.

Patient landed at Vigo. Vessel, &c., disinfected by the Port Sanitary Officers.

The patient, a native trimmer, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Removed to Hospital, and the vessel and bedding disinfected. The sickness proved to be non-infectious.

One of the firemen, who died, and was buried at sea. Vessel disinfected by the Port Sanitary Officers.

Two of the cases left the steamer at Santa Marta; the third case came home from Rotterdam to Liverpool and, on arrival in this City, was sent to the Royal Southern Hospital. The usual disinfection was carried out.

Information was received from the Medical Officer of Walthamstow that two children who arrived by this vessel on the 3rd July were suffering from Diphtheria. The vessel was disinfected by the Port Sanitary Officers.

Removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

Date 1914.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which patient was removed.
July 11	Baltic ...	New York ...	Measles ...	... ..
July 13	Diplomat ...	Calcutta ...	Enteric Fever	Grafton Street
July 14	Matina ...	Santa Marta	Enteric Fever	... ..
July 14	Georgian ...	Boston ... for Manchester	Erysipelas ...	... ..
July 20	Darro ...	Buenos Ayres	Enteric Fever	... ..
July 27	Aquitania ...	New York ...	Measles ...	Grafton Street
July 29	Princess Royal	Scotland ...	Measles ...	Grafton Street
July 29	Celtic ...	New York ...	Enteric Fever	... ..
Aug. 4	Oronsa ...	Callao ...	Chicken-pox (4 cases)	... ..
Aug. 4	Drina ...	La Plata ...	Small-pox ...	New Ferry ...

REMARKS.

The patient, a child, proceeded in a Taxi to its home in Birmingham. Vessel disinfected by the Port Sanitary Officers.

Removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

One of the firemen, who had gone to his home in the City, was reported as suffering from Enteric Fever. The usual disinfection carried out.

The patient, a seaman, proceeded with the vessel to Manchester.

The patient, a third class passenger, was landed at Lisbon on the homeward passage. Vessel was disinfected by the Port Sanitary Officers.

Removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

Removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

The patient, a passenger, died on the passage to Liverpool, the body being brought to this Port. Disinfection of the vessel carried out by the Port Sanitary Officers.

Four cases occurred during the passage; three of these were landed at Lisbon, the fourth coming with the vessel to this Port. Disinfection of the vessel and bedding was carried out by the Port Sanitary Officers and the City Staff.

The patient, a child, second class passenger, was landed at Lisbon. Instructions were sent by wireless message to the Surgeon, and 900 passengers and 126 members of the crew were vaccinated by him. On arrival at Liverpool on August 4th, the passengers and crew, numbering 303, were inspected. Two stewards who had slight fever were removed to the Port Hospital by ship's boat, but the sickness proved non-infectious. The names and addresses of all on board were transmitted to the Authorities of destination, and the vessel disinfected. No further sickness occurred.

Date 1914.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which patient was removed.
Aug. 6	Appam ...	West Coast of Africa	Enteric Fever	Royal Infirmary
Aug. 7	Jomborg ...	St. Petersburg	Enteric Fever	Grafton Street
Aug. 13	Virginian ...	Montreal ...	Enteric Fever	... ..
Aug. 14	Merion ...	Philadelphia	Enteric Fever	Grafton Street
Aug. 14	Carmania ...	New York ...	Diphtheria ...	... ..
Aug. 15	Zeeland ...	New York ...	Diphtheria ... (4 cases)	Mill Lane ...
Aug. 16	Kursk ...	New York ...	Measles ... (18 cases)	Fazakerley ...
Aug. 18	Kenuta ...	Callao ...	—	... ..

REMARKS.

The patient, a Steward, who had gone to his home in the City, was removed to the Royal Infirmary, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient went to his home in the City. Vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a seaman, went to his home in Seaforth. Disinfection of the vessel and bedding carried out by the Port Sanitary Officers and the City Staff.

Four children, passengers, were removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

On August 16th, this vessel arrived with 339 second and third class passengers, and was visited by the Port Medical Officer. The ship's Surgeon reported nine cases of Measles, and two cases of Fever. On the morning of the 17th, the Customs rang up to say there was sickness amongst the second class passengers in the Customs' baggage examining room; here one case of Measles was found and removed to the Fazakerley Hospital. The passengers were again examined and three new cases of Measles were discovered. Altogether seven acute cases and one suspected case were removed to Hospital, and ten convalescent cases were taken to the Emigrant Boarding House, 7, Hardy Street. Disinfection of the vessel carried out by the Port Sanitary Officers.

This vessel arrived at Liverpool on August 18th from London. During the discharge of cargo 24 dead rats were found in three of the holds. Strict precautions against the egress of rats was at once observed, and the vessel fumigated throughout on the 21st August, the process lasting 30 hours. This resulted in the destruction of 182 rats, and a further 11 were caught by the Authority's rat-catcher.

Date, 1914.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Aug. 21	Cretic ...	Mediterranean Ports	Suspected Enteric Fever	Fazakerley ...
Aug. 21	Moeris ...	Batoum ...	Enteric Fever	Brownlow Hill
Aug. 27	Orcoma ...	S. American Ports	Enteric Fever	... ..
Aug. 31	Teutonic ...	Montreal ...	Enteric Fever	Northern ...
Sept. 4	King Orry ...	Isle of Man...	Enteric Fever	Grafton Street
Sept. 5	Baltic ...	New York ...	Scarlatina ... (2 cases)	Fazakerley ...
Sept. 5	Peleus ...	Yokohama ...	Cholera ...	... ..
Sept. 11	Counsellor ...	Galveston ...	Enteric Fever	Netherfield Road
Sept. 11	Barrowmore	Kustenji ...	Small-pox ...	... ..

REMARKS.

Two members of the crew, having symptoms suspicious of Enteric Fever were removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff. The sickness proved non-infectious.

The patient, one of the crew, was admitted to the Brownlow Hill Infirmary. The usual disinfection was carried out.

The patient, a passenger who was convalescent on arrival, proceeded to his home in Birkenhead, the vessel being disinfected by the Port Sanitary Officers.

The patient, one of the crew, a trimmer, was admitted to the Northern Hospital. Vessel disinfected.

A steward, who had gone to his home in the City, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

Two children, passengers, were removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

This vessel arrived at Liverpool on September 5th and was medically inspected, when it was ascertained that a case of Cholera had occurred on July 8th, whilst lying at Macassar. The patient, the quartermaster, had been bathing in the harbour; he was taken ill at noon with diarrhoea, vomiting, pains, cramps, and tenesmus. He collapsed and died at eight o'clock on the same day. Disinfection was performed at Macassar. On arrival in this Port the crew (European and Chinese), numbering 66, were inspected and found all well. The water-tanks were emptied and disinfected, water having been taken in at Macassar.

Patient, a seaman, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a seaman, was left in Hospital at Bahia, where disinfection was carried out.

Date 1914.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Sept. 12	Skodsborg ...	Gracia ...	Enteric Fever	Northern ...
Sept. 17	Merion ...	Philadelphia	Enteric Fever	Grafton Street...
Sept. 19	Andes ...	Buenos Ayres	Enteric Fever	Northern ...
Sept. 23	Laconia ...	Boston ...	Measles ...	Fazakerley ...
Sept. 30	Orduna ...	Panama ...	Chicken-pox ...	... ..
Sept. 30	Orduna ...	Panama ...	Enteric Fever	Northern ...
Sept. 30	Hydaspes ...	River Plate...	Enteric Fever ...	... ..
Oct. 7	Asian ...	Galveston ...	Enteric Fever	Northern ...

REMARKS.

Patient, a seaman, removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Patient, a steward, removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

This vessel arrived on September 19th from Buenos Ayres, via Monte Video, Santos, Rio-de-Janeiro, Bahia, Lisbon and Vigo. The ship's Surgeon reported the presence of ten cases of Enteric Fever on board, namely, a photographer, a laundryman, five stewards, a wireless operator, the boatswain and an engineer. The patients began to be ill between the 6th and 15th of September, the infection having been acquired during the stay of three weeks in Buenos Ayres. All the patients had partaken of food served from the second cabin pantry whilst at Buenos Ayres, but it was not possible to trace the source of infection beyond this. Diarrhoea was prevalent during the stay at Buenos Ayres, but a general infection of the ship's water could be excluded. All the patients were removed to Hospital and the vessel and bedding disinfected. The remainder of the crew and passengers, numbering 706, were inspected and found well.

The patient, a third class passenger, was removed to Hospital, and the vessel disinfected by the Port Sanitary Officers.

The patient, a third class passenger, was landed at La Pallice on the homeward passage. Vessel disinfected by the Port Sanitary Officers.

The patient, a third class passenger, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a French reservist, was landed at Teneriffe on the home passage. Vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The Second Officer, suffering from Enteric Fever, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Date, 1914.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.		
Oct. 7	Demerara ...	Buenos Ayres	Small-pox ...	...	...	...
Oct. 14	Halizones ...	Galveston ...	Enteric Fever	Northern	...	...
Oct. 16	Deseado ...	Buenos Ayres	Enteric Fever	Northern	...	...
Oct. 20	Ortega ...	Callao ...	Enteric Fever	...	...	...
Oct. 22	Somali ... (Transport)	—	Diphtheria ...	Mill Lane	...	...
Oct. 23	Georgic ...	Montreal ...	Diphtheria ...	Stanley	...	...
Oct. 23	Ortega ...	Callao ...	Measles ...	...	...	...
Oct. 23	Tunisian ...	Montreal ...	Enteric Fever	Northern	...	...
Oct. 25	Matina ...	Santa Marta	Enteric Fever	...	...	...
Oct. 25	Lake Manitoba	Montreal ...	Enteric Fever	Birkenhead	...	...

REMARKS.

The patient, a third class passenger, was left at Lisbon on the 3rd of October, the vessel being disinfected by the ship's officers on arrival in Liverpool. The crew and passengers were examined, and the names and addresses of all on board obtained. These were forwarded to the places of destination. 270 passengers and crew were re-vaccinated by the Surgeon on board. There was no extension of the disease.

A mess room boy, suffering from Enteric Fever, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

This patient, the wife of a trooper, was removed to the David Lewis Northern Hospital. The usual disinfection was carried out.

A third class passenger, suffering from Enteric Fever, was landed at Monte Video on the home passage. Vessel disinfected by the Port Sanitary Officers.

The patient, a trooper, was removed to the City Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a seaman, was admitted to the Stanley Hospital. Vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

The case occurred during the home passage, the patient being convalescent on arrival in this Port, and was allowed to proceed.

A steward, who had gone to his home, in Walton, developed Enteric Fever, and was admitted to the Northern Hospital. Vessel disinfected.

One of the crew, a fireman, having Enteric Fever, was left in Hospital at Santa Marta on the homeward passage. Vessel disinfected by the Port Sanitary Officers.

A steerage passenger, who arrived by this vessel, was admitted to the Birkenhead Borough Hospital. Vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

Date 1914	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.		
Nov. 6	Titian ...	Buenos Ayres	Enteric Fever	...	...	...
Nov. 8	Helmslock ...	Rio Janeiro...	Scarlatina ...	Grafton Street		
Nov. 9	Oropesa ...	Callao ...	Enteric Fever	Northern	...	...
Nov. 14	Franconia ...	New York ...	Enteric Fever	Northern	...	...
Nov. 14	Hesperian ...	Rangoon ...	Measles (3 cases)	...	...	...
Nov. 14	Sallust ...	New Orleans	Enteric Fever (2 cases)	Northern	...	...
Nov. 20	Moeris ...	Alexandria ...	Enteric Fever	...	...	...
Nov. 22	China ... Hospital Ship	—	Enteric Fever (2 cases)	Northern	...	...
Nov. 22	China ... Hospital Ship	—	Scarlatina (2 cases)	Fazakerley	...	...
Nov. 22	China ... Hospital Ship	—	Diphtheria (3 cases)	Mill Lane	...	...
Nov. 28	St. Paul ...	New York ...	Enteric Fever	Northern	...	...

REMARKS.

The patient, a distressed British seaman, who was convalescent on arrival came from the Hospital at Bahia. Vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

The patient, a seaman, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a passenger, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

The patient, a third class passenger, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

Three children, passengers, were removed to the Emigrant Boarding House, Kent Square, for isolation. Vessel disinfected by the Port Sanitary Officers.

The patients, two seamen, members of the crew, were removed to Hospital and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

The patient, a distressed British seaman, who was convalescent on arrival, proceeded to his home. Disinfection of the vessel was carried out by the Port Sanitary Officers.

The patients, naval men, were removed to the David Lewis Northern Hospital by the City Ambulance Staff.

Two naval seamen were removed to the City Hospital at Fazakerley by the City Ambulance Staff.

Two seamen and a greaser, naval men, were removed to the City Hospital East, Mill Lane, by the City Ambulance Staff.

The patient, a third class passenger, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and the City Staff.

Date 1914.	of Vessel	Where from.	Nature of Sick ness	Hospital to which Patient was removed.		
Nov. 28	Beechwood ...	Cienfuegos ...	Enteric Fever	...	...	...
Nov. 28	Hubert ...	Galveston ...	Enteric Fever	...	...	...
Nov. 29	Ville-de- Havre	Callao ...	Dysentery ...	Mill Road	...	...
Nov. 30	Missanabie ...	St. Johns ...	Chicken-pox	Fazakerley	...	...
Dec. 7	Missanabie ...	St. Johns ...	Enteric Fever	Brownlow Hill		
Dec. 12	Hova... ...	Buenos Ayres	Enteric Fever	...	...	...
Dec. 14	Potero ...	Monte Video	Enteric Fever	Fazakerley	...	...
Dec. 16	Norheim ...	New York ...	Enteric Fever	Brownlow Hill		
Dec. 16	Homereus ...	Buenos Ayres	Enteric Fever	...	...	...
Dec. 17	Soudan . Hospital Ship	...	Enteric Fever (3 cases)	Fazakerley	...	...
Dec. 17	Soudan ... Hospital Ship	...	Chicken-pox	Fazakerley	...	...
Dec. 19	Asian ...	New Orleans	Enteric Fever	...	...	...

REMARKS.

The patient, the third officer, was landed at Fayal on the home passage. Vessel disinfected by the Port Sanitary Officers.

One of the crew of this vessel, an engineer, who had gone to Chester, developed the disease after arrival at his home. Vessel disinfected by the Port Sanitary Officers.

The patient, a seaman, was removed to the Mill Road Infirmary, and the vessel disinfected by the Port Sanitary Officers.

A child, passenger, who was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

A second class passenger, suffering from Enteric Fever, who arrived by this vessel, was admitted to the Brownlow Hill Infirmary. The usual disinfection was carried out.

The patient, the captain, died on the homeward passage, and was buried at sea. Vessel disinfected by the Port Sanitary Officers.

The patient, a saloon boy, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

One of the crew of this vessel, a seaman, having Enteric Fever, was admitted to the Brownlow Hill Infirmary. The vessel was disinfected.

The second officer of this vessel died from Enteric Fever on the home passage, the body being buried at sea. Vessel disinfected by the Port Sanitary Officers.

The Three patients, naval men, were removed to the 1st Western General Hospital at Fazakerley.

The patient, a naval man, was removed to the City Hospital, Fazakerley Annexe.

The patient, a cattleman, was landed at Avonmouth on the passage to Liverpool. The vessel was disinfected by the Port Sanitary Officers.

Date 1914.	Name of Vessel.	Where from.	Nature of Sickness.	Hospital to which Patient was removed.
Dec. 21	St. Paul ...	New York ...	Measles ...	... ..
Dec. 24	Gotthard ...	Leghorn ...	Enteric Fever	Northern ...
Dec. 24	Hesperian ...	St. Johns ...	Diphtheria ...	Mill Lane ...
Dec. 28	Scandinavian	Halifax ...	Enteric Fever	Northern ...
Dec. 30	Alcantara ...	Buenos Ayres	Measles ... (2 cases)	... ..

REMARKS.

The patient, a child convalescent, proceeded with the parents to their home. Vessel disinfected by the Port Sanitary Officers.

The patient, an apprentice, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

A steerage passenger, who was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

The patient, the 3rd engineer, was removed to Hospital, and the vessel and bedding disinfected by the Port Sanitary Officers and City Staff.

The cases were left at Buenos Ayres on the homeward passage. Vessel disinfected by the Port Sanitary Officers.

During the year 124 cases of Phthisis were reported on vessels arriving in the Port. In all instances disinfection of the vessel, etc., was carried out.

Sanitation of Vessels.

With the object of preventing evil effects which are especially liable to follow insanitary conditions on shipboard, owing to the close aggregation of persons, the sanitary conditions on board ship are subjected to close inspection. The number of vessels presenting defect is considerable.

The defects are classified under three headings as arising from:—

- (a) Faulty construction.
- (b) Wear and tear.
- (c) Lack of cleanliness, and nuisance.

A large number of the defects, included under the third heading, which are found on British ships, arise from the crews having been paid off and the forecastles being unoccupied. This is specially applicable to the tramp class of vessel. In the case of ships of foreign nationality, or carrying "native" crews, the crew are at the time inhabiting quarters where filth or nuisance exists.

The Inspectors made 6,592 visits and re-visits to vessels during the year.

Work of the Port Sanitary Inspectors.

The area of the Port is divided into four districts, viz., those of the North Docks, the North Central Docks, the South Docks, and the out-lying districts comprising Birkenhead and Garston. These are each in charge of an Inspector who is fully qualified, both by examination and for the most part by previous sea-going experience. These Inspectors visit all vessels lying within their district to ascertain their sanitary condition and also to enquire concerning the health of those on board, and as to the occurrence of sickness during the voyage, particularly stringent enquiries being made in the case of all vessels from ports where Plague, Cholera or Smallpox are prevalent. Enquiries are also made as to the occurrence of sickness or mortality amongst the rats on vessels from plague-infected ports.

The Inspectors report daily to the Assistant Port Medical Officer, and vessels have frequently to be visited by him in the docks on both sides of the Mersey, owing to reports thus received from the Inspectors.

INSPECTION OF SHIPPING.

Year ending 1914.

TABLE 8.

The following Table indicates the number of visits paid to vessels by the Inspectors during the year:—

Nationality.	Visits.	Re-visits.	Total.
British ...	3,942	1,810	5,752
Norwegian ...	189	86	275
Swedish...	45	14	59
Spanish...	125	66	191
Danish ...	57	7	64
German...	36	7	43
Italian ...	16	11	27
Belgian ...	7	2	9
Russian...	30	15	45
French ...	26	35	61
Dutch ...	22	8	30
Greek ...	8	5	13
Austrian ...	2	2	4
Chilian ...	3	3	6
American ...	6	3	9
Peruvian ...	1	—	1
Brazilian ...	1	—	1
Roumanian ...	1	—	1
Portuguese ...	1	—	1
	<u>4,518</u>	<u>2,074</u>	<u>6,592</u>

In addition to vessels examined by Sanitary Inspectors 1,674 visits were made by the rat-searchers, viz., 838 visits and 836 re-visits.

SUMMARY OF INSANITARY CONDITIONS.

TABLE 9.

Class of Vessels.	Number Inspected.	Number on which nuisances were found.	Per cent.
FOREIGN—			
Steamers	2,843	1,033	36·37
Sailing	57	27	47·37
Total... ..	2,900	1,060	36·55
COASTWISE—			
Steamers	1,235	175	14·17
Sailing	383	74	19·32
Total... ..	1,618	249	15·38

Nationality.	Number Inspected.	Number on which Nuisances were found.
British	3,942	1,129
Foreign	576	180
	4,518	1,309

Nuisances arising through

Defects of Original Construction.	Per cent. of Total Defects.	Structural Defects through wear and tear.	Per cent. of Total Defects.	Dirt, and other conditions prejudicial to health.	Per cent. of Total Defects.
61	1·51	774	19·14	3,207	79·34

TABLE 10.

THE FOLLOWING TABLE SHOWS THE NUMBER AND NATIONALITIES OF THE VESSELS ON WHICH DEFECTS WERE DETECTED DURING THE YEAR 1914.

NATIONALITY.	Number of Ships.	Dirty Forecables.	Dirty Wash-houses, Store-houses, etc.	Foul Water Casks.	Foul Bilges.	Foul W.C's.	Accumulations of offensive refuse.	Gear stowed in Crew's Quarters.	Damp Quarters.	Water lodging on top of Forepeak Tank.	Animals kept, causing nuisance.	Leaky Decks overhead.	Defective Stoves.	Defective Bulkheads.	Defective Ports and Sky-lights.	Defective Ventilators.	Defective Flooring Boards.	Defective Hatches and Lockers.	Defective Chain Pipes.	Defective Hawse Pipes.	Defective W.C. Fittings.	Defective Soil Pipes.	Inadequate Ventilation.	Inadequate Lighting.	Inadequate Drainage.	Bare Iron not Sheathed.	W.C's deficient in Ventilation and situation bad.	Total number of Defects.	Total Remedied.
British ...	1129	1873	135	27	...	773	16	5	52	12	...	112	25	55	332	25	8	13	24	25	28	9	11	4	10	12	1	3587	2926
Norwegian ...	67	70	4	2	...	42	1	...	3	...	...	10	...	2	27	1	...	...	...	...	4	1	14	...	2	...	1	184	149
Swedish ...	19	11	...	...	...	10	...	...	4	...	...	3	2	1	9	...	...	...	2	...	...	...	1	...	1	...	...	44	26
Spanish ...	37	45	...	...	...	15	4	...	1	...	...	3	...	2	12	...	...	...	...	...	7	...	1	1	...	...	...	91	81
Danish ...	7	2	...	...	...	3	...	...	1	...	...	3	...	...	4	...	...	...	...	2	...	...	...	...	...	...	...	15	7
German ...	9	8	2	...	...	7	1	...	...	...	...	...	1	...	4	...	...	...	...	...	1	...	...	...	...	...	...	24	17
Italian ...	7	10	...	...	...	4	1	...	5	...	...	1	...	...	4	...	...	...	...	...	2	...	...	1	...	...	...	28	24
Belgian ...	2	2	...	...	...	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	3
Russian ...	7	7	...	...	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	8
French ...	13	19	3	...	...	7	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	31	30
Austrian ...	2	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3
Dutch ...	3	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3
Greek ...	4	6	...	...	...	1	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	12	7
Chilian ...	1	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	3
American ...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...
Roumanian ...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Total ...	1303	2058	144	29	1	867	23	5	68	12	...	134	29	60	399	26	8	13	26	27	42	10	28	6	13	12	2	4042	3287

Canal Boats.

The Port Sanitary Inspectors have been appointed Canal Boat Inspectors, under the Canal Boat Acts of 1877 and 1884. This is rendered necessary by the large number of Canal Boats which are to be found lying in the Liverpool Docks. By rotation one Inspector devotes one day per week for a period of five months at a time, as it has been found that in this way it is easier to follow up any boat that may be defective. These boats are for the most part kept in very good repair.

Contraventions of the Acts, and of the regulations made under them, include failure to register the boat; failure to have the boat clearly marked with the registered number or to produce the certificate of registration on demand; failure to keep the cabins or water-casks in good order or repair; carrying offensive cargoes insufficiently separated from the cabins; overcrowding or improper habitation; and failure to notify infectious disease.

During the year 959 boats were inspected, of which number 60 were found to have some condition contravening the regulations.

Special Visits.

In addition to the daily routine inspection of the sanitation of vessels, special visits require to be made to many vessels on report of sickness; smallpox contacts have also to be kept under daily observation. Disinfection has to be carried out or supervised on all vessels which have had cases of actual or suspected infectious disease. During the year 21 vessels were disinfected, in some cases extensive precautions being required. The Inspectors also supervise the fumigation of the holds of vessels for the destruction of rats, when certificates of such fumigation are required by foreign sanitary authorities.

The whole time of one Inspector has been occupied in supervising the landing of cattle from coastwise cattle boats, under the provisions of the Diseases of Animals Acts, to which duties they have been specially appointed.

The following figures have been kindly supplied by the Department of Agriculture and Technical Instruction for Ireland.

TABLE 11.

RETURN OF THE NUMBERS OF CATTLE, SHEEP AND SWINE
EXPORTED FROM IRELAND TO LIVERPOOL DURING
THE YEAR 1914, SHOWING THE PORTS IN IRELAND AT
WHICH THE ANIMALS WERE SHIPPED.

	Cattle.	Sheep.	Swine.
Ballina	285	12,637	1,737
Belfast	8,706	1,676	—
Cork	32,946	12,931	5,265
Drogheda	33,015	35,040	1,908
Dublin	137,653	160,023	17,250
Dundalk	51,400	63,144	20,451
Londonderry	9,412	8,879	210
Newry	8,919	15,049	1,489
Sligo	233	7,204	10,010
Waterford	49,340	24,829	5,837
Westport	706	16,142	1,163
Total	332,615	357,554	65,320

TABLE 12.

RETURN SHOWING THE TOTAL NUMBERS OF THE SEVERAL
KINDS OF CATTLE, SHEEP AND SWINE EXPORTED FROM
IRELAND TO LIVERPOOL, DURING THE YEAR 1914.

CATTLE.	No.	SHEEP.	No.
Fat	262,005	Fat	155,596
Stores (for fattening)	55,449	Stores	1,459
Milch Cows	6,953	Lambs	200,499
Springers	2,326		
Other Cattle	286	Total Sheep	357,554
Calves	5,596		
Total Cattle	332,615	SWINE.	
		Fat	64,855
		Stores	465
		Total Swine	65,320

SUPERVISION OF FOOD IMPORTATIONS.

The supervision of food importations forms a very important branch of the Port Sanitary Staff's work, and is reflected in the satisfactory and sound condition of the large amounts of foods passed at this Port.

The Regulations governing the inspection and admission of food stuffs were issued by the Local Government Board of England in 1908 and 1909, the former year inaugurating the general and systematic inspection throughout England and Wales; since then, Port Authorities in Scotland and Ireland have received similar orders from their respective Boards, so that now the same system is in vogue throughout Great Britain.

The Regulations deal with certain classes of meats, which, although as far as one can see, are perfectly sound, it is undesirable to allow into the country, namely, such meat as scrap meat or trimmings, small portions which might have come from diseased or unhealthy animals or have been subjected to a process of pickling in which undesirable chemical substances have been added. Again, entry is forbidden to pork products (severed parts of the carcass or other edible parts of the pig) which have not been salted or cured and which have not been "officially" certified as from pigs absolutely free from disease at the time of slaughter. This *official certificate must be affixed to the container or package in which the pork is imported. Entire pig carcasses may be admitted, but pig carcasses without the heads are not admitted.

In addition to the examination and exportation of the above-mentioned particular classes of meats, the Regulations provide for the general examination of all food stuffs imported by ships and landed in the docks. This work is carried out by the Food Inspectors, and their operations cover an extensive field, such foods as quarters of beef, carcasses of mutton and lamb, tinned meats, fruits, grain, &c., being supervised for evidences of disease, putrefaction or conditions rendering these partly or wholly unwholesome or unsuitable for food.

In the Unsound Food Regulations provision is also made for the disposal by destruction or otherwise of unsound goods.

With regard to meat importations, the officers of H.M. Customs from their close contact with incoming vessels, have much information

* An "Official" certificate is a form of certificate duly recognised by the Local Government Board and published in full in the London "Gazette."

regarding the description and the names of the importers of all classes of meats, and accordingly are empowered by the Regulations to detain all meats coming under the first heading already mentioned, viz., scrap meats, trimmings, pigs' carcasses without heads, uncertified pork products, etc., these are examined by the Inspectors, and if found to come under the undesirable classes of meats, they must be exported. Customs Officers also notify our food inspectors of any consignments of foodstuffs which during their routine duties they may have reason to regard as unsound or unwholesome.

Apart from this valuable co-operation of Customs Officers, the Food Inspectors are regularly on duty on the dock quays and sample and examine consignments of foodstuffs landed. This examination consists in the sampling of a portion of the consignment; the inspection of the outsides of the cases, bags, or containers and, where necessary, they can require packages to be opened and their contents exposed for inspection. If, on a preliminary sampling a certain degree of unsoundness is discovered, further examination may be necessary, and the aid of the bacteriological or chemical analyst called in.

This further sampling, which might require the detention of the goods for a period, may, and frequently is, carried out in warehouse or cold store. Numerous cold stores are situated in the neighbourhood of the docks, and the Food Inspectors are daily engaged in these stores examining meat consignments.

The work is being carried out not only in the central docks situated within the boundaries of the City of Liverpool, but also in Birkenhead, Bootle, and in the outlying district of Garston, where the L. & N. W. Railway Co., have opened fine docks, and an extensive import fruit trade has been established. The docks on both sides of the Mersey are therefore within the jurisdiction of the Port Sanitary Authority.

Meat Importations.

The importations of meats during the year have been very large, but show a slight decrease on the whole on the figures for 1913. The outbreak of war, in addition to other causes (chiefly financial), interfered somewhat with the output from freezing works, and also the exportation of frozen meats, chiefly from Argentine.

In addition to the above causes the supply was interfered with by the delay and temporary withdrawal of many meat-carrying steamers which were requisitioned for the conveyance of troops. The relative shortage of frozen meat was compensated for by the large quantities of Irish cattle, pigs, &c., which were landed for slaughter at Birkenhead and Liverpool. The accompanying table 22, page 86, shows the number of animals landed from Ireland at the Mersey Docks and Harbour Board's landing stages, the great majority of which were subsequently slaughtered at the abattoirs adjoining.

The dead meat imported into the United Kingdom from various ports in the British Empire constitutes about 30 per cent, of the total meat food imports, the balance coming from the countries where the control of it is in other than British hands. This country has largely to depend therefore on American and other interests for its supplies of imported beef.

Large quantities of meat are now being diverted to the United States, and no new sources have so far opened out to make up the deficiency.

The importations into the United Kingdom of chilled and frozen beef from all sources were approximately 5,732,140 quarters; of these, the imports from Australia and New Zealand increased by 50 per cent. more than the largest import previously sent. The United States shipped to us 55,307 quarters. The number of quarters from South America showed a decrease. The South American chilled meat importations have decreased, and the total quantity imported was 1,184,206 quarters. *Into the Port of Liverpool 2,732,031 quarters of chilled and frozen beef were received during 1914, and the quantities sent out by different countries are given in Table 14. The export of mutton from Australia has declined by 30·5 per cent. The total importations into the United Kingdom of frozen mutton and lamb amounted to 12,788,839 carcasses, and of these Liverpool received 3,647,948 carcasses.

* The figures given in the Report are taken from the Reviews of Foreign Meat Trade for the year 1914, published by Messrs. Weddel & Co. and The Colonial Consignment and Distributing Co., Ltd.

TABLE 13.

SHOWING THE VALUE OF THE IMPORTS OF MEATS (EXCEPT POULTRY AND GAME) INTO THE PORT OF LIVERPOOL DURING THE YEARS 1911, 1912 and 1913.

Description.	Years.		
	1911.	1912.	1913.
	£	£	£
Bacon	4,517,870	3,966,241	4,668,201
Beef, fresh and refrigerated ...	4,030,387	5,280,279	7,847,284
Beef, salted	86,051	56,668	51,103
Hams	1,850,289	1,713,643	1,874,527
Mutton, fresh and refrigerated...	2,800,434	2,648,946	2,953,843
Pork, fresh and refrigerated ...	46,190	28,776	35,851
Pork, salted	57,634	55,421	56,617
Rabbits	241,404	223,780	299,271
Unenumerated fresh, refrigerated and salted... ..	526,293	656,165	491,123
Preserved, otherwise than by salting	847,261	770,820	801,377
Totals	£15,003,813	£15,400,739	£19,079,197

During the early months of the war vessels carrying important meat cargoes were captured and sunk, viz., the “Kaipara,” “Vandyck,” and “La Correntina.”

Table 14 shows the ports in the United Kingdom at which importations of frozen and chilled meat from Australia, New Zealand and South America have been discharged during 1914.

TABLE 14.

TABLE SHEWING THE PORTS IN THE UNITED KINGDOM AT WHICH THE IMPORTATIONS FROM AUSTRALIA, NEW ZEALAND AND SOUTH AMERICA WERE DISCHARGED DURING 1914.

Port of Discharge.	AUSTRALIA.			NEW ZEALAND.			SOUTH AMERICA.			
	Mutton Carcases.	Lamb Carcases.	Beef Quarters.	Mutton Carcases.	Lamb Carcases.	Beef Quarters.	Mutton Carcases.	Lamb Carcases.	Beef. Frozen Quarters.	Chilled Quarters.
London ...	1,109,101	1,044,466	482,206	2,415,833	2,888,708	253,382	662,235	376,392	288,914	1,345,996
Liverpool ...	899,035	543,716	664,811	99,998	530,225	35,060	1,174,659	400,315	847,954	1,184,206
Southampton ...	—	—	—	3,280	14,758	610	69,508	49,372	56,245	332,641
Bristol ...	35,156	36,425	44,492	71,730	88,384	21,574	—	—	—	—
Hull ...	5,000	500	5,080	3,200	7,093	300	58,976	6,430	50,993	—
Glasgow ...	33,406	6,527	21,590	15,816	31,458	10,558	—	—	—	—
Newcastle ...	6,524	2,974	18,287	6,793	3,908	300	32,962	4,968	36,831	773
Cardiff ...	—	—	—	—	—	—	32,861	4,995	22,319	—
Cork ...	—	—	—	—	—	—	6,597	—	3,662	—
Plymouth ...	—	—	—	—	—	—	4,131	424	1,950	1,406
Totals ...	2,088,222	1,634,608	1,236,466	2,616,650	3,564,534	321,784	2,041,929	842,896	1,308,868	2,865,022

NOTES.—(a) In addition there were importations into London of 55,307 quarters Frozen Beef from United States and 700 quarters Frozen Beef from South Africa.

(b) A large proportion of the River Plate Chilled Beef discharged at Southampton and Liverpool was forwarded by rail to London for realisation.

In the report for the year 1913 the importance of Liverpool as an importing and distributing centre was emphasized, and it was shown that fully 93 per cent. of the imported meat was distributed by the three chief railway companies by rail to other parts of the Kingdom.

The inspection of meats has been carefully attended to, and, on the whole, no serious fault has been found with the consignments. The condition of the meat has been clean and well cared for, both at the slaughter-houses and during transport. In chilled meats there is much less liability to moulds and black spot than previously.

Some supervision is still required during the landing of cargoes to see that the spaces at the ships' side used for discharging are kept clean and free from all straw, manure, dust, and conditions of an objectionable nature. Several shipping firms have been approached on this subject with good results, and it is hoped that all who are responsible will give the matter their close attention.

During 1913 there was a remarkable absence of damaged meat cargoes as compared with 1912. This absence has been continued during 1914.

It is justifiable to conclude that more care is being taken in the refrigeration on shipboard, the storing of meats, insulation, &c.

Australian Meats.

The following meat imports required special attention:—

During the year certain consignments of beef crops were landed from Australia. These had not been cut or "cropped" in accordance with the Australian meat inspection regulations to remove portions affected with worm nodules. They were detained in cold stores and examined by cutting, after which they were released.

This "cropping" regulation has not been interpreted as strictly as desirable by some firms in Australia, and it has been necessary to have this inspection carried out on arrival here.

During March, June, and July large consignments of what is known as "neck beef" were landed from Australia ex s.s. "Persic,"

s.s. "Indralema," s.s. "Medic," and s.s. "Afric." This neck beef was considered as coming under the heading of "scrap beef" in the Regulations, and was accordingly ordered to be exported.

The s.s. "Ceramic," from Australia, landed 60 quarters of beef affected with bone taint, and the s.s. "Morayshire" brought a large quantity of sheep in a decomposing condition. These were dealt with in the usual way.

Frozen pork still continues to be imported from New Zealand, Australia, United States, China, and elsewhere.

Three vessels arrived from China during the year, bringing 8,276 carcasses, also large quantities of frozen and preserved egg pulp and other produce. These carcasses were specially examined for evidence of trichinosis and other infections. A consignment of pork was received from South America, which was not admissible under the Regulations, this was ordered to be exported.

Army Service Meat.

Since the outbreak of war large quantities of frozen meat have been rejected by the Officers of the Army Service Corps as unsuitable for army purposes, the sides being either too heavy, too fat, &c., and accordingly have been placed aside for public sale. Our officers have been asked to examine this before disposal, and in many cases the meats have been found to be of excellent quality, some, although from lean animals, yet were sound, and after examination could on no account be interfered with; others however were from very emaciated animals, and on an examination of the lymphatic glands evidences of disease, chiefly tuberculosis, were found; these were condemned.

A quantity of meat, comprising quarters of beef, was landed in Liverpool in December. This meat was a portion of the Army supplies, and part had probably, through bad storage, become slightly decomposed and mouldy. This meat was examined in cold store on arrival here, that which was visibly unsound, approximately about 215 tons, was destroyed. The remaining quarters were closely examined, carefully trimmed by experienced butchers, and allowed to be sold for immediate consumption. This examination is proceeding at time of report.

Boned and Bagged Meats.

The importation of meats in the form of cut-up portions, and of organs, e.g., livers, hearts, kidneys, &c., packed in boxes and bags, has been very large during the year.

The memorandum on the freezing and packing of such meats issued in July of last year, by the Medical Officer, has been widely circulated, and has done much to improve the packing and to facilitate the inspection of these goods.

The only imports of this class which have required closer supervision are frozen ox tongues, from South America and the United States. In last year's retrospect, page 97, will be found a special report on the prevalence of actinomycosis and tuberculosis in South American tongues. It has now been found that large numbers of these tongues from the United States show actinomycotic lesions, chiefly in the blade. The work is still being carried out, and large numbers show evidences of infection. Owing to the closer examination now carried out in South America and the United States, it has been possible, in the case of some consignments, to allow them to pass on a percentage examination.

The glands attached to the North American tongues have been removed in trimming, and no evidence of glandular disease was therefore forthcoming. It is very desirable that all lymphatic glands should be left attached to imported meats.

Fruit.

The importations of fruit still continue to be very large; in fact, 1914 has been a record year for fruit imports.

During February, March, and April, Jaffa oranges, which are all inspected and sorted on the quays, showed a large percentage unsound, and the total quantity destroyed was 456 tons.

A large consignment of Tripoli onions ex s.s. "Corsican Prince" were landed in a heated and partially decomposing condition. The majority of this parcel was placed under detention, and the sorting of them occupied several weeks; finally about 2,187 bags were destroyed.

Owing to the wasteful condition in which Bartlett pears have arrived from time to time, exporters seem to prefer to preserve them by canning than to take the risk of landing them in a wasty condition; only one consignment of green Bartlett pears arrived during the year, namely, 13 barrels in September, and all were destroyed.

Several vessels which usually make Southampton their port of discharge in regard to fruit, have come on to Liverpool owing to Southampton being closed. These vessels have chiefly landed fruit from the West Indies, including pineapples, bananas, mangoes, limes, &c.

During August, September and October large quantities of Jamaica bananas arrived in Liverpool. As many as three steamers a week arriving with average cargoes of 50,000 bunches. This was chiefly due to the closing of other ports and the diversion of trade from Hamburg.

The s.s. "Valdes," inward bound with a large cargo of Almeria grapes, was in collision in the river Mersey; sewage polluted river water gained access to the holds and damaged the cargo; as a result of a bacteriological examination they were reported as polluted with sewage. The Medical Officer seized the contaminated part of the consignment and obtained a destruction order from the Magistrates, and about 6,806 barrels were destroyed. This fruit was landed in Birkenhead docks, but was subsequently removed to Liverpool by lighter for destruction.

Sixteen tons of damaged Brazil nuts ex various steamers were allowed to be removed for crushing and incorporation with cattle food.

Inedible Fats.

The importation and use of inedible fats in establishments where pure lard and similar products are manufactured for human food has engaged the attention of the Port Sanitary and Health Departments for some time; it is of interest to note that a clause has been obtained in

the recent Liverpool Corporation Act of 1913 dealing with this matter. The clause reads as follows:—

“ Any person taking or introducing, or causing to be taken or introduced, any fats which are unfit for the food of man into any premises in which any food for man into the composition of which fat enters is manufactured or prepared for sale or into any premises directly or indirectly connected by a passage pipe or in any other way with any such premises (except so far as such passage pipe or other connection, as the case may be, are required or used for sanitary or other similar purposes and not in connection with the manufacture or preparation hereinbefore mentioned) shall for each offence be liable to a penalty not exceeding five pounds unless he can prove that such fats were not taken or introduced into such premises for the purpose of being used and have not been used as an ingredient in the manufacture or preparation of any food for man.”

Bacteriological and Chemical Examination.

The work carried out by the Bacteriological and Chemical Departments of the City in the examination of contaminated and other goods and tissues for evidences of disease has been of the utmost value.

The bacteriological examination of imported shell-fish for evidence of contamination by sewage and the relationship to enteric fever has occupied our attention for some years; it is referred to in previous reports. The importance of this subject of shell-fish contamination and its influence on the Public Health has led the Local Government Board, on the representations of many Local Authorities, to consider the advisability of issuing a series of Regulations to control this matter. At the date of writing this report, the Local Government Board have issued the Public Health (Shell fish) Regulations, 1915. These have been issued after the subject had been fully considered by the Royal Commission on Sewage, and after consultation with the Fishmongers Company. They come into force on March 1st, 1915.

Provision is made in these Regulations for the closing of shell fish layings in regard to which there is evidence to show that shell-fish from these have carried infectious or other disease, and are likely to be a

source of danger. The power to close layings is vested in the Sanitary Authority of the district in which the layings are situated.

The Local Authority in whose district the shell-fish are consumed shall make a representation to the Sanitary Authority of the district where layings are situated indicating that the shell-fish have caused, or are likely to cause infectious or other disease and are required to take action. The responsible Sanitary Authority are also required to take action on the report of their own Medical Officer.

The Medical Officer of Health of every district where shell-fish are laid should examine the condition of the layings in his district as to their liability to dangerous contamination, and to prevent shell-fish being distributed for sale for human consumption unless the shell-fish have been relaid in fresh water for a period of not less than a fortnight.

The Commission on Sewage Disposal in their report state "that in the great majority of cases in which outbreaks of disease have been clearly traced to shell-fish, the foreshore layings and ponds from which the shell-fish have been procured have been so situated that the opportunities of pollution by sewage have been obvious and indisputable. That is to say, the foreshores, &c., in question were such as would have been condemned on a careful examination by a trained person without the aid of bacteriological examination of the water or the shell-fish."

The closing of a laying, therefore, will not depend, as a routine, on the result of a bacteriological examination, but will be based largely on epidemiological conditions or considerations such as the proximity of sewage outlets to the shell-fish bed.

The chemical examination of canned goods and other articles has yielded valuable results.

Certain specimens of imported beef preserved according to the "Lindley" process were submitted for analysis. The Analyst found that the external portions of the meat to the depth of $\frac{1}{4}$ inch contained eight parts of Formaldehyde per million parts of beef (equivalent to .05 grains per pound). The internal portions contained five parts of Formaldehyde per million (or .0035 grains per pound).

Samples were frequently taken of tinned meat, but in no case was the amount of metallic ingredient present sufficient to warrant any action, and in the majority of cases only traces were found.

An import calling for special mention was a cargo of sugar which had been contaminated with red lead. The vessel came from Hamburg, and the bags of sugar had been branded with red lead. This chemical substance had been used in excessive amount, and had percolated through the bags and contaminated the sugar.

The bags were cut open and the damaged sugar removed, this portion was allowed to be sent to a refinery where it was submitted to chemical processes with the object of removing the lead, the firm agreed to submit samples of the refined sugar before release. The original contaminated sugar contained .22 per cent. of red lead, and in this condition was quite unfit for human consumption. The firm after refining the sugar submitted tests to show that it was free from lead, but these were not accepted by the City Analyst, who pointed out that the boiling up of organic materials such as sugar with metallic compounds would only fix some of the metal in organic form, and it would be impossible to detect it by the ordinary chemical analysis until the material had been reduced to an ash; he demonstrated that this refined sugar still contained 1/40 grain per pound. The Medical Officer considered this to be an objectionable amount, and that it could not be used for human consumption. The sugar was ultimately diluted to such an extent with refined pure sugar as to contain a mere trace of lead, so small as to be negligible. The sugar was finally tested and passed as sound.

Certain samples of beef brine were found to contain small amounts of Boric Acid, and these were dealt with according to the Regulations.

A consignment of imported egg yolk was analysed and found to contain 1.4 per cent. of borates, calculated as Boracic Acid. The importers were communicated with and asked for an explanation for the presence of this unusual and unnecessary amount. It was pointed out in reply that a preserved egg yolk was demanded by firms in the country who had no cold storage chambers. The importers were warned.

Certificates and Notices.

During the year there were 1,932 certificates of release granted to Customs Officers and importers of meat consignments in respect of foods detained for examination on the quays or in cold stores.

Notices to export undesirable foods under the Foreign Meat Regulations were issued in 8 cases; the food products in these cases did not comply with the Regulations as regards certification, absence of preservatives, &c.

It must be clearly understood that meat or offal condemned by Magistrate's order is not, in all cases, destroyed, but the great bulk of this material is removed under suitable guarantees to industrial works, where the products are utilised for industrial purposes. These include tallow rendering, soap making, manure manufacture, cattle and pig food and size making. The Medical Officer through his Inspectors, satisfies himself that unsound foods are satisfactorily dealt with.

During the year 852 certificates of destruction or industrial utilisation were granted.

Certification of Meat Products.

Throughout the greater part of the year there was a demand for soundness of the consignments, and samples have been submitted from the United States of America and other countries.

Special arrangements have been made to meet this demand, the duties consisting of obtaining satisfactory evidence as to the identity and soundness of the consignments, and samples have been submitted from time to time to the Analyst for evidences of prohibited or excessive preservatives, &c.

The United States of America have now issued (B.A.I. Order 211, Regn. 27), new regulations relating to certificates of meat and meat products for importation into the United States.*

These came into force on January 1st, 1915, and copies of the certificates are required to accompany each consignment.

A certificate in Form A is to be given in respect of meats derived from animals slaughtered in this country and shipped direct. A certificate in Form B relates to meat products, the transportation of which to the United States from the country of slaughter of the animals has been interrupted by unloading in another foreign country for a purpose other than the transfer from one carrier to another.

A certificate in Form C is given in respect of articles of a kind prepared customarily to be eaten without cooking which contains muscle tissue of pork.

The certifying officer will satisfy himself by an investigation of the methods of the trader, an inspection of his premises, and by occasional sampling of the goods, that all the requirements of the certificate have been complied with.

TABLE SHOWING THE QUANTITY OF MEATS CONDEMNED
DURING THE YEARS 1910 to 1914.

TABLE 15.

Year.	Beef.				Mutton.				Pork.			
	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.
1910.....	381	11	0	5	15	3	1	26	54	3	3	27
1911.....	659	10	2	24	18	7	0	13	65	4	2	20
1912.....	684	8	3	0	475	12	1	2	9	12	3	18
1913.....	88	0	3	12	76	16	0	13	1	4	2	15
1914.....	441	5	2	0	47	5	2	2	1	5	0	2

TABLE SHOWING THE QUANTITY OF OFFAL CONDEMNED
DURING THE YEARS 1910 to 1914.

TABLE 16.

Year.	Beef.	Mutton.	Pork.	Veal.
1910.....	13,388 pieces.	28,319 pieces.	13,845 pieces.	4 pieces.
1911.....	32,816 „	56,596 „	8,629 „	1,070 „
1912.....	68,272 „	57,163 „	8,229 „	196 „
1913.....	28,055 „	66,705 „	12,946 „	64 „
1914.....	36,561 „	41,298 „	1,919 „	44 „

TABLE SHOWING QUANTITIES OF GENERAL FOOD STUFFS
CONDEMNED DURING THE YEAR 1914.

TABLE 17.

Description.	No. of Tins.	Weight in Pounds.	Description.	No. of Tins.	Weight in Pounds.
Canned Goods—			Milk	1,346	1,346
Apricots ...	22	22	Beef	10,795	64,997
Apricot Pulp ...	711	7,576	Kidneys ...	6	12
Cherries ...	123	307	Ox Tails ...	43	258
Fruit, mixed ...	17	39	Ox Tongues ...	184	357
Grapes... ..	108	108	Mutton ...	79	474
Peaches ...	228	285	Rabbits ...	7	23
Pears	1,513	3,700	Crayfish ...	123	62
Pine Apples ...	222	555	Lobsters ...	52	59
Raspberry Pulp	1	11	Salmon ...	3,310	3,200
Beans	17	31	Cheese... ..	110	220
Tomatoes ...	3,207	7,294	Sundries ...	5	4

TABLE 17--continued.

Description.	Packages	Weight.				Description.	Packages	Weight.			
		Tons.	Cw's	Qrs.	lbs.			Tons.	Cw's	Qrs.	lbs.
Fruit (Fresh)—						Vegetables—					
Apples	133	6	18	—	20	Onions.....	2445	171	12	2	14
„ loose ...	—	—	5	1	15	„ loose	—	11	15	—	—
Bananas	28031	1271	3	—	24	Potatoes	22	—	19	2	16
„ loose	—	319	15	2	—	„ loose	—	—	5	—	—
Grapes.....	8015	132	5	—	10	Tomatoes	1892	11	8	—	16
„ loose	—	—	10	—	20	„ loose	—	1	14	—	26
Grape Fruit ...	3	—	2	2	20	Cereals—					
Lemons	181	5	5	—	10	Barley	—	—	—	3	16
„ loose ...	—	5	13	—	—	Flour	90	5	12	2	—
Melons.....	615	35	5	2	12	Maize, bulk.....	—	56	17	2	3
„ loose ...	—	78	11	—	—	Oats.....	1	—	1	—	—
Oranges	556	17	12	1	20	Wheat	173	9	4	1	—
„ loose	—	970	6	—	8	„ bulk.....	—	1250	14	2	16
Pears	795	30	3	1	22	General—					
Plums	6	—	1	3	—	Bacon and Ham	—	1	—	2	21
						Cheese	65	—	3	3	26
Brazil Nuts ...	173	16	—	2	—	Cocoa	—	—	1	3	26
Cocoa Nuts ...	67	2	13	—	24	Eggs	23	1	16	2	6
„ loose	—	—	5	—	—	Fish	4	—	4	2	22
						Poultry	—	—	—	1	21
						Rabbits	831	25	18	—	12
						„ loose ...	—	—	5	—	—
Fruit (Dried)—						Tea	—	—	2	1	6
Raisins ...	166	2	1	2	—						

TABLE SHOWING THE QUANTITY AND DESCRIPTION OF OFFAL CONDEMNED DURING
THE YEAR 1914.

TABLE 18.

Name of Organ.	Beef.		Mutton.		Pork.		Veal.	
	Number.	Weight, Pounds.	Number.	Weight, Pounds.	Number.	Weight, Pounds.	Number.	Weight, Pounds.
Heads	—	—	—	—	130	1,611	—	—
Cheeks	3,516	11,403	—	—	—	—	—	—
Tongues and Throats	11,332	47,969	—	—	9	15	44	82
Lungs	—	—	18	10	2	4	—	—
Plucks... ..	—	—	2,000	6,054	—	—	—	—
Sweetbreads	576	130	112	14	—	—	—	—
Hearts	1,883	7,299	2,797	1,359	—	—	—	—
Livers... ..	2,553	24,662	747	873	4	13	—	—
Weasands	835	403	—	—	—	—	—	—
Stomachs	1,075	14,095	—	—	—	—	—	—
Skirts	6,483	5,970	320	32	—	—	—	—
Mesenteries	—	—	—	—	1	2	—	—
Kidneys	6,109	5,634	35,304	3,933	1	1	—	—
Udders	368	1,474	—	—	—	—	—	—
Feet	—	—	—	—	1,772	811	—	—
Tails	1,830	3,481	—	—	—	—	—	—
Casings	1	1	—	—	—	—	—	—
Totals	36,561	122,521	41,298	12,275	1,919	2,457	44	82

The organs dealt with above were rejected for various reasons, notably, decomposition and diseased conditions, such as Cysts, Tuberculosis. Inflammation. Actinomycosis, &c.

TABLE SHOWING THE QUANTITY AND DESCRIPTION OF MEATS CONDEMNED *
DURING THE YEAR 1914

TABLE 19.

DESCRIPTION.	TOTAL WEIGHT.			CAUSE OF DESTRUCTION.					
	Tons cwt. qrs. lbs.			Tubercular.		Brine Stained, Mouldy and Decomposed.		Other causes.	
Beef	441	5	2 0	—	—	435	15 2 24	5	9 3 4
Mutton.....	47	5	2 2	—	—	47	4 3 22	0	0 2 8
Pork	1	5	0 2	0	10 0 21	0	12 2 5	0	2 1 4
Veal	0	0	2 20	—	—	0	0 2 20	—	—
Total.....	489	16	2 24	0	10 0 21	483	13 3 15	5	12 2 16

* These were destroyed or allowed to go for industrial purposes to the satisfaction of the Medical Officer.

Included in the above weights were 4069 quarters Beef, 1469 carcasses Mutton, and 15 carcasses Pork.

TABLE 20.

Showing comparative Value of the more important Food Stuffs imported at the principal Ports during the year 1913.

	London. 1	Liverpool. 2	Hull. 3	Harwich. 4	Bristol. 5	Leith. 6	South- ampton. 7	Glasgow. 8	Manchester 9	Newcastle. 10
	£	£	£	£	£	£	£	£	£	£
Animals	179,806	69,331					55,075	751		
Butter	7,868,903	10,418	3,617,017	1,395,695	28,732	2,509,665	1,689,660	307		2,631,361
Cheese	3,732,708	995,607	211,452	110,785	969,982	181,806	198,177	187,332	141,724	63,617
Cocoa	1,727,187	622,154	—	327,177	142,103	—	798,036	—	—	—
Coffee	2,083,487	27,004	—	109,589	109,589	—	681,836	—	—	—
Grain	17,819,573	16,996,644	10,829,716	102,270	6,580,286	3,659,495	535,283	5,166,353	4,577,438	1,614,942
Eggs	2,817,883	234,311	1,996,485	1,400,663	25,457	1,527,154	153,060	2,882	84,141	500,742
Fish	1,300,006	1,784,791	636,192	230,030	—	116,139	64,482	—	—	169,957
Fruit	6,365,035	5,501,733	631,926	140,540	1,122,581	29,337	641,250	750,747	324,984	217,888
Lard	1,321,193	1,975,959	839,065	—	433,556	12,162	161,407	208,808	937,589	6,819
Margarine	505,799	334,295	1,173,029	1,116,645	10,561	160,158	—	34,909	41	—
MEAT :—										
Bacon	1,502,336	4,668,201	1,586,558	6,208,733	327,474	104,169	320,426	748,851	117,418	710,094
Beef, Fresh	5,567,397	7,847,284	268,273	1,077	85,986	—	1,818,739	196,290	—	185,516
" Salted	—	51,103	—	—	—	—	—	—	—	—
Hams	261,961	1,874,527	14,222	—	21,191	—	133,059	638,521	120,010	—
Mutton, Fresh	7,093,780	2,953,843	87,583	212,342	125,597	—	134,915	—	—	99,754
Pork, Fresh	1,093,939	35,851	—	178,718	—	—	545	—	—	—
" Salted	—	56,617	—	—	—	77,016	—	—	—	34,334
Rabbits	438,286	299,271	—	19,947	—	—	—	—	—	—
Unenumerated	618,643	491,123	85,473	216,757	—	9,905	—	—	—	—
Preserved	2,288,325	801,377	60,095	—	71,668	—	184,453	118,448	118,032	—
Milk, Condensed	983,952	156,408	215,131	80,721	46,019	56,468	—	—	172,544	209,413
Poultry and Game	591,287	122,535	78,234	94,895	—	—	37,657	—	—	—
Sugar ..	8,025,015	3,992,207	1,049,030	102,359	1,181,620	1,325,097	214,861	159,882	955,601	285,656
Vegetables	1,238,261	703,433	715,916	160,464	131,673	38,454	869,886	79,129	95,166	104,582

TABLE 21.

TABLE SHOWING THE TOTAL QUANTITIES OF THE
DIFFERENT FOOD STUFFS CONDEMNED DURING
THE YEAR 1914.

	Tons.	Cwts.	Qrs.	Lbs.
Beef, Mutton, Pork and Veal...	489	16	2	24
Offal (Beef, Mutton, etc.) ...	61	6	0	23
Canned Goods	40	11	3	21
Fruit and Vegetables	3,092	13	1	25
Cereals	1,322	10	3	7
General (Fish, Poultry, Rabbits, etc.)	29	13	3	0
	5,036	12	3	16

TABLE 22.

STATEMENT SHOWING THE NUMBER OF LIVE CATTLE,
&c., LANDED AND SLAUGHTERED AT THE FOREIGN
ANIMALS WHARF (BIRKENHEAD, ALFRED AND
WALLASEY LAIRAGES) DURING THE YEARS 1904 TO
1914 INCLUSIVE.

Year.	LANDED.				SLAUGHTERED.			
	Oxen.	Calves.	Pigs.	Sheep and Lambs.	Oxen.	Calves.	Pigs.	Sheep and Lambs.
1904	279,188	4	—	275,806	279,495	4	—	272,924
1905	276,725	5	—	160,105	276,273	4	—	163,705
1906	270,853	5	—	94,948	270,245	5	—	95,250
1907	214,061	2	—	97,688	215,821	2	—	94,714
1908	180,283	—	—	76,334	179,872	—	—	79,315
1909	148,233	2	—	8,053	147,812	2	—	8,053
1910	89,613	3	—	304	90,430	—	—	304
1911	78,232	2	—	40,338	79,215	1	—	39,314
1912	19,167	—	—	14,251	19,167	—	—	14,251
	143,114	819	69,016	335,291	140,854	810	67,586	334,880
1913	3,482	—	—	—	3,482	—	—	—
	351,276	930	104,274	449,344	90,857	174	15,498	131,241
1914	—	—	—	1,707	—	—	—	1,707
	333,115	248	65,242	357,528	171,716	121	16,876	158,562

Ordinary type represents Foreign. Heavy type represents Irish.

The Aliens Act, 1905.

An "immigrant" ship (i.e., a ship bringing more than 20 alien steerage passengers to be landed in the United Kingdom) may not land these passengers at other than immigration ports at which Immigration Officers and Medical Inspectors have been appointed and Immigration Boards have been established.

The immigration Ports are:—Cardiff, Dover, Folkestone, Grangemouth, Grimsby, Harwich, Hull, Leith, Liverpool, London (including Queenborough), Newhaven, Southampton, and the Tyne Ports.

An alien shall be considered to be an "undesirable" according to section 1 (3) of the above Act:—

- (a) If he cannot show that (a) he has in his possession or (b) is in a position to obtain the means of decently supporting himself and his dependents (if any); or
- (b) If he is a lunatic or an idiot, or owing to any disease or infirmity appears likely to become a charge upon the rates or otherwise a detriment to the public; or
- (c) If he has been sentenced in a foreign country, with which there is an extradition treaty for crime, not being an offence of a political character, which is, as respects that country, an extradition crime within the meaning of the Extradition Act, 1870; or
- (d) If an expulsion order under this Act has been made in his case, but in the case of an immigrant who proves that he is seeking admission to the country solely to avoid prosecution or punishment on religious or political grounds or for an offence of a political character, or prosecution, involving danger of imprisonment or danger to life and limb on account of religious belief, leave to land shall not be refused on the ground merely of want of means, or the probability of his becoming a charge on the rates.

Under the Aliens Act, 2nd class passengers are exempted from inspection, subject to the conditions expressed in the bond into which the shipping company granted exemption is required to enter, viz.:—That no undesirable immigrant will be landed amongst the exempted passengers. H.M. Inspector of Aliens, however, has emphasised the importance of a close supervision by immigration officers of the above-mentioned class.

The above Act has been placed in abeyance since the outbreak of war, and all aliens are now dealt with under Orders in Council.

EMIGRATION.

There was a marked decrease in the number of emigrants leaving the Port of Liverpool during the year 1914, the number being 232,954, a decrease of 115,587, compared with the previous year when the number of emigrants leaving the Port was 347,541.

A special feature to be noticed is that the great majority of British emigrants, i.e., those from the United Kingdom and Ireland, go to Canada, whilst the bulk of the foreign emigrants go to the United States.

The following is a return of the number of emigrants and clearances of ships, including those passenger vessels in which medical inspection was not required, from 1900-1914.

TABLE 23.

In 1900, 149,884 Emigrants, and 660 Clearances of Ships.			
„ 1901, 167,452	„	761	„
„ 1902, 214,113	„	791	„
„ 1903, 265,918	„	902	„
„ 1904, 274,584	„	924	„
„ 1905, 277,536	„	983	„
„ 1906, 352,818	„	1,090	„
„ 1907, 385,797	„	1,102	„
„ 1908, 212,155	„	1,113	„
„ 1909, 253,400	„	1,117	„
„ 1910, 336,088	„	1,149	„
„ 1911, 312,027	„	1,153	„
„ 1912, 323,187	„	1,165	„
„ 1913, 347,541	„	1,199	„
„ 1914, 232,954	„	1,065	„

The following Tables, Nos. 24 and 25, relating to Emigration have been kindly supplied by the Board of Trade.

TABLE 24.

Statement showing the Number of Passengers of British and Foreign Nationality that left the Port of Liverpool for places out of Europe in the year 1914:—

DESTINATION.	British Subjects.	Aliens.	Total.
British North America....	55,062	17,591	72,653
Australia and New Zealand	5,666	101	5,767
British South Africa	704	68	772
India (including Ceylon)	3,895	192	4,087
Other British Colonies and Possessions	4,128	241	4,369
Total British Empire.....	69,455	18,193	87,648
United States.....	49,178	87,396	136,574
Other Foreign Countries	5,696	3,036	8,732
Total Foreign Countries...	54,874	90,432	145,306
Grand Total.....	124,329	108,625	232,954

TABLE 25.

Number of Passengers of British and Foreign Nationality, as given in Table No. 24, that sailed from the Port of Liverpool, in each month of the year 1914.

MONTH.	British Subjects.	Aliens.	Total.
January	6,063	4,619	10,682
February	7,631	5,045	12,676
March.....	13,002	8,436	21,438
April	14,782	9,926	24,708
May	13,658	10,823	24,481
June	9,566	8,533	18,099
July	10,666	9,612	20,278
August.....	14,568	18,164	32,732
September	14,338	20,779	35,117
October	10,463	7,306	17,769
November	5,786	3,259	9,045
December	3,806	2,123	5,929
Total	124,329	108,625	232,954

Emigrant Inspections.

All emigrants travelling second class or steerage on board vessels outward bound are subject to inspection by the Medical Officers of the Board of Trade, Dr. Burland or Dr. Macintyre. The crews of all such vessels bound for America are also subjected to inspection by these Officers. An Inspector of the Port Sanitary Authority attends these clearances in order to supervise the removal of all persons who may be rejected on account of actual or suspected infectious disease.

There were 302 such inspections, and 43 persons were rejected on account of infectious disease, most of whom were removed to the various City Hospitals.

TABLE 26.

Date, 1914	Name of Vessel.	Nature of Sickness.	Where taken to.	Description of Patient.
Jan. 28	Teutonic ...	Sores on Head and Face	Boarding house ... Duke Street	Child
March 5	Alaunia ...	Observation ...	Boarding House ... Great George Square	Infant
„ 21	Irishman ...	Chicken-pox ...	Boarding House ... 35, Union Street	Infant
„ 26	Cymric ...	Chicken-pox ? ...	Returned Home ...	Child
April 1	Merion ...	Scarlatina ...	Netherfield Road Hospital	Child
„ 18	Teutonic ...	Chicken-pox ...	City Hospital, Fazakerley.	Child
„ 18	Mauretania ...	Observation ...	Boarding House ... Great George Square	Infant
May 1	Empress of Britain ...	Chicken-pox ...	City Hospital, Fazakerley.	Adult
„ 6	Lake Manitoba	Diphtheria ...	City Hospital, Fazakerley.	Adult

TABLE 26.—Continued.

Date, 1914.		Name of Vessel.	Nature of Sickness.	Where taken to.	Description of Patient
May	7	Ceramic ...	Measles ...	City Hospital, Mill Lane	Child
„	8	Calgarian ...	Measles ...	City Hospital, Fazakerley.	Child
„	9	Laurentic ...	Chicken-pox ...	Walsall	Child
„	13	Virginian ...	Chicken-pox ...	City Hospital, Fazakerley.	Child
June	13	Teutonic ...	Chicken-pox ...	City Hospital, Fazakerley.	Child
„	27	Medic ...	Mumps ...	Boarding House ... 35, Union Street	Child
„	27	Medic ...	Phthisis ...	Wansty, Essex	Adult
„	30	Arabic ...	Phthisis ...	Sheffield.....	Adult
July	23	Adriatic ...	Diphtheria ...	City Hospital, Mill Lane	Child
„	23	Adriatic ...	Diphtheria ? ...	City Hospital, Mill Lane	Child
„	30	Cedric ...	Rash ...	Christian Street	Adult
Aug.	1	Laurentic ...	Chicken-pox ...	City Hospital, Fazakerley.	Child
„	15	St. Louis ...	Measles ...	City Hospital, Fazakerley.	Child
Sep.	2	Celtic ..	Scabies (2) ...	Boarding House ... Duke Street	Children
„	2	Celtic ...	Impetigo ...	Boarding House ... Duke Street	Child
„	9	Baltic ...	Scabies (6) ...	Boarding House ... Duke Street	Children
„	9	Baltic ...	Corneal Ulcer ...	Boarding House ... Duke Street	Child
„	12	Megantic ...	Chicken-pox ... Convalescent.	Boarding House ... Duke Street	Child
„		Domlnion ...	Observation ...	Boarding House ... Great George Square	Infant
„	17	Adriatic ...	Scabies (2) ...	Boarding House ... Duke Street	Children
„	22	Arabic ...	Chicken-pox ...	Boarding House ... Great George Square	Infant
„	23	Cedric ...	Scabies ...	Boarding House ... Duke Street	Child
„	30	Celtic ...	Septic Impetigo ...	Boarding House ... Duke Street	Child
Oct.	21	Cedric ...	Scabies (2) ...	Boarding House ... Duke Street	1 Child & 1 Infant
Nov.	7	New York ...	Chicken-pox ... Convalescent.	Boarding House ...	Child
„	11	Adriatic ...	Chicken-pox and Ringworm	City Hospital, Fazakerley.	Child

As in previous years, the various bodies connected with the administration of the Port, viz., H.M. Collector of Customs and staff, the Mersey Docks and Harbour Board and their officers, and the various Shipping Companies, have co-operated with the officers of the Port Sanitary Authority in the performance of their duties, and have worked harmoniously together in every particular. The Consular Body have at all times given courteous assistance.

E. W. HOPE, M.D.

MUNICIPAL OFFICES,

LIVERPOOL, *25th March, 1915.*

